JULY 1955

Printing Equipment Engineer

An Industry-wide Technical Publication

PLEASE ROUTE THIS COPY TO

Manager	Pressroom Foreman
Production Manager	Bindery Foreman
Plant Superintendent	Mailing Foreman
Platemaking Foreman	Maintenance Superintendent
Composing Foreman	Purchasing Agent

For filing, please return to

Lead Subjects this Month . . .

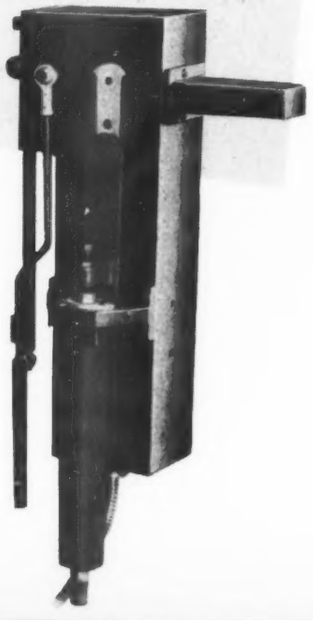
Controlling Atmospheric Conditions
Research and Engineering Council Report
ANPA Mechanical Conference Hears of Research
and Other Important Articles

A CASE HISTORY

of a STAR Repeat Order . . .

In November 1953, Earl L. Deal, Mechanical Superintendent of Norfolk Newspapers Inc., in Norfolk, Va., ordered two STAR Automatic Quadders. Six months later he ordered another. All three quadders operated so efficiently and satisfactorily that in April of this year, an additional order was placed for four STAR Selectro-Matic Quadders...the newest and most modern of *all* quadders.

The features and advantages of the STAR Quadders that inspired these repeat orders from the Norfolk Newspapers Inc., are increasing production in hundreds of other composing rooms...and can do the same for you. Why not investigate. Start today by writing for the new brochure which gives complete information.



HERE ARE ONLY A FEW OF THE OUTSTANDING FEATURES OF THE STAR SELECTRO-MATIC QUADDER

- * Memory circuit provides continuous operation.
- * Push button selector controls.
- * Simple, proven Hydraulic Actuation.
- * Short line device quads "widow" automatically.
- * Operates from Teletypesetter tape signals when required.
- * 8 hour installation.
- * Interchangeable between all 30 pica Linotype and Intertype machines. When either one is replaced by the other the STAR Quadder is transferred, saving the original investment.

Precision TRADE ★ MARK Parts

BRANCH 1327 BROADWAY, KANSAS CITY, MO
AGENCIES CHICAGO · MINNEAPOLIS
LOS ANGELES · DENVER · BOSTON
CANADA SEARS LTD and Agents Overseas

LINOTYPE PARTS
Company, inc.
SOUTH HACKENSACK, N. J.

"basic tool" for newspaper color...

Fast, accurate routing of curved plates is a "must" in the production of quality newspaper color printing. You get it with the STA-HI-MASTER ROUTER, with its specially designed high-speed head, feather-touch controls and daylight-bright illumination . . . Because the machine is completely enclosed, there is no hazard of flying metal chips, no dangerous and unsightly mess of shavings on the floor . . . Only the Master Router gives you the exclusive "bonus features" of the Automatic Plate Stripper, Double Page Matching Device and Air Jet Chip Remover. Several hundred satisfied users will tell you "they like it!" If you'd like the detailed story, just write, wire or phone.

STA-HI CORPORATION, BOX 152, WHITTIER, CALIFORNIA

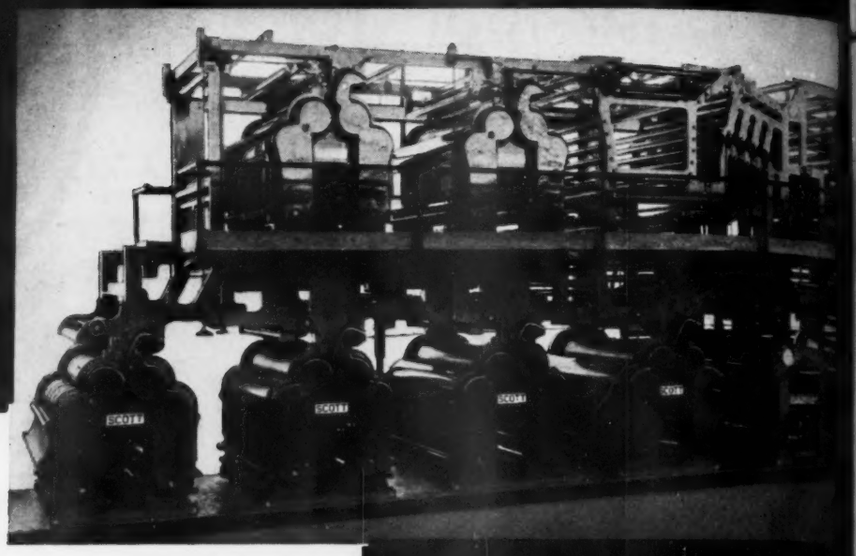
NEW! . . . A Tubular Master Router for routing tubular press plates is now available for early delivery.

STA-HI®

. . . your best buy

COLOR *with* SCOTT PRESSES

creates "PREFERENCE"



CLIMBING THE LADDER TO INCREASED LINEAGE SALES . . .

ABOVE: Scott Octuple Press with 4 color printing couples superimposed over black units. Gives full color printing without losing any black page capacity.

"Color Creates Preference!" Ad men from every part of the country endorse color as the most effective lineage booster on the newspaper scene today . . . a sure sign of the modern newspaper organization.

The desirability of color comes hand-in-hand with the need for full-tone, perfect register, high-speed production. And installed color capacity has to be just right — Do you want to spot one color with varying black page capacity? — Do you need black plus independent four-color capacity? — These decisions tell you what your press needs will be. No compromise in design or arrangement should be made . . . none is necessary with Scott "Extra High-Speed" press.

Whether a single unit with a Scott Reversible Drive (a flick of a lever for color arrangement) is best for you, or multi-combination presses for variable four-color location, Scott engineers can advise and equip your pressroom. Reliable, modern standardized design — superior quality high-speed color reproduction from feed to folding; these are experienced proved facts, not claims.

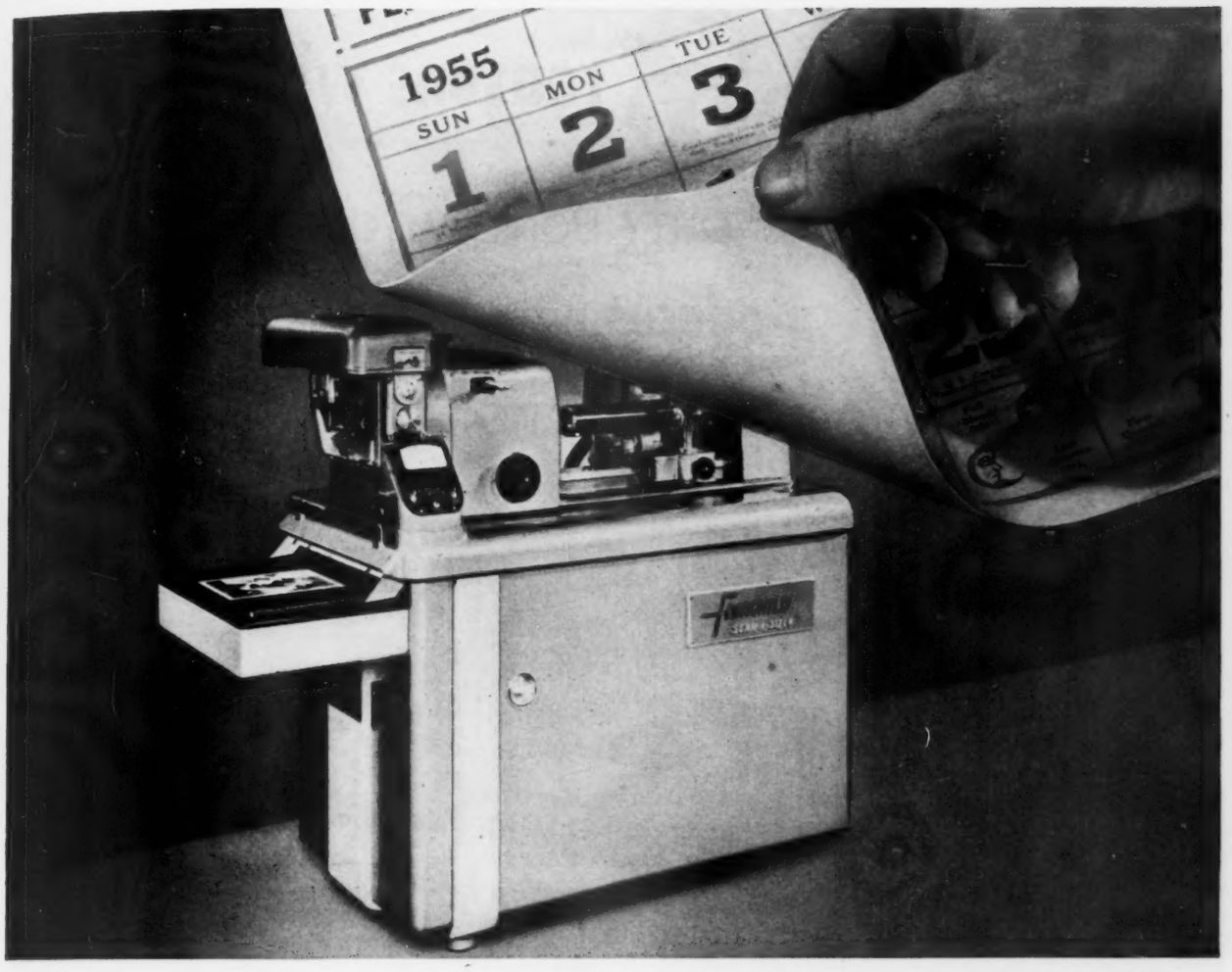
WRITE FOR DETAILS . . . The complete illustrated Scott color press bulletin is yours on request.

Buy with CONFIDENCE - - - Buy SCOTT

WALTER SCOTT & CO., INC.

PLAINFIELD, NEW JERSEY

9-55-2



FAIRCHILD reports progress on new electronic engraving equipment

Later this year newspapers and others will be using pilot models of the SCAN-A-SIZER® machine to enlarge or reduce photo copy as much as 4½ times while engraving 85- or 120-line cuts up to 13¾" x 16½". It will produce high quality plastic halftones at low cost from photos or mounted art up to 18" x 22½".

The Variable Response Unit, which is now undergoing a full-scale program of tests and experiments, will aid in compensating for variations in photo copy and mechanical media by varying tonal values and dot structure *during the engraving process.* New Tandem-rigs for SCAN-A-GRAVER® machines that permit simultaneous double-plating from one piece of copy are now in production. Color electronic engraving? . . . Fairchild has already made good color plates in the laboratory. A definite announcement about its commercial application will be made in the future!

A six year record . . .

Fairchild entered the graphic arts field in 1949. Today, the SCAN-A-GRAVER is used by the majority of small and medium-sized daily and weekly newspapers in the U. S. and Canada. Now, the significant new advances outlined above definitely establish Fairchild electronic engraving even more widely in the graphic arts. You will see that the year 1956 will be a continued period of even more dynamic growth!

• For more information on Fairchild electronic engraving machines that make low-cost halftones right in your own plant, write Fairchild Graphic Equipment, Inc., 88-06 Van Wyck Expressway, Jamaica, N. Y., Department 100-9E.

FAIRCHILD
GRAPHIC EQUIPMENT, Inc.

1 of 6 reasons why

THE *NEW* HEAVY DUTY PONY AUTOPLATE

produces BETTER PLATES

F-A-S-T-E-R

REASON #6

AUTOMATIC PLATE COOLING

When the shaved plate is positioned on the Cooling Stand the operator swings the aluminum end guards over the plate. *Automatically*, water cools the plate, compressed air removes excess moisture, end covers return to their former position and the plate is ready for the pressroom. Illustration shows water cooling and air drying mechanism.

IF IT'S Wood IT'S GOOD

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY

EXECUTIVE AND SALES OFFICE 501 FIFTH AVENUE, NEW YORK 17, N. Y.

July 1955

An industry-wide technical magazine published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.

PRINTING EQUIPMENT *Engineer*

Volume 85 **Number 10**

PRINTING EQUIPMENT *Engineer*, published monthly at 1276 West Third St., Cleveland 13, Ohio. Copyright 1955 by Willsea Publishing Co.

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Subscription price per year, $4.50 in advance in U.S.A. Single copy current issues, 50c; December Equipment and Supplies Catalog Issue $2.50 per copy in United States, $3.50 outside of United States. (U. S. currency). Subscription in foreign countries $5.50 (U. S. currency) in advance. Canadian printing plant mechanical and production executives receiving *Printing Equipment Engineer* under BPA regulations will be charged $1 postage per year in advance to cover additional postage to Canada.

Member Publications BPA Business Audit

Accepted as Controlled Circulation Publication at Cleveland, Ohio.

Printed in U. S. A.

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There is probably as much, if not more, flexibility in typographic design than in any other existing art—provided the designer possesses the necessary talents. *Printing Equipment Engineer's* cover this month was designed by Richard N. McArthur, President of Higgins-McArthur Co., Atlanta, Ga.'s famous advertising typographic firm. As we have remarked previously, we're not typographers. Like our readers, we do admire excellent typography created by others. If one were to remove the dusky pink color tint blocks, he would be reminded of boxing gloves when looking at the type, but in combination the effect is pleasing. Besides, speaking of pink, men are now wearing pink ties and shirts, the color having previously been reserved for the feminine sex. All of which demonstrates that typographic variation is inexhaustible.

Equipment and Supplies

If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT Engineer, 1276 West Third St., Cleveland 13, O.

Operator's Cabinet

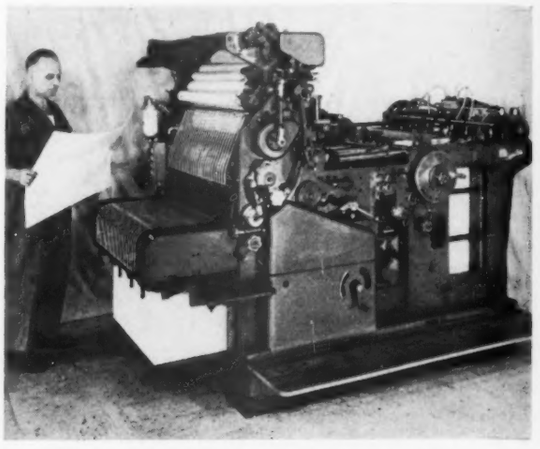
An auxiliary cabinet designed for the Linotype operator has been announced by Hamilton Mfg. Co. The flat top of end table height permits operator to lay out his copy, and the cabinet body provides storage space for matrices and other materials. From one to four drawers may be installed, or the cabinet body may be left blank, as desired. Another feature is a matrix storage insert which fits into the drawers. Overall size of the cabinet is 13½ in. wide, 15 in. deep and 22½ in. high. For further details, please mention PEE No. 504 in your request.

Vest Pocket Chemist Disappearing

The days of the "hip-pocket chemist" in the nation's lithographic plants are num-

(*Continued on Page 8*)

ATF Super Chief Press—American Type Founders announces the introduction of an offset press in the 29 in. size range, called the ATF Super Chief. The compact unit, designed by ATF engineers, handles sheets up to 22½ in. by 30 in. The press is finished in gray with all operating controls highlighted in bright red and green colors. Controls are mounted on the press for a simple hook up to a main power line. The Super Chief offers both sheet and stream feeding. The three point register system consists of four headstops, two pull guides, four slow downs and two sets of absence detectors, one for stream feed and one for sheet feed. The pull guide accommodates stocks from 9 lb. onionskin to 0.030 in. board.



The inking system consists of 19 rollers, including four form rollers. The all steel rollers are copper plated. A quoin type lock-up has been designed for each plate bar and the plate cylinder undercut of 0.030 in. accommodates dry offset plates. The impression control is calibrated in thousandths, and the operator sets this adjustment according to the caliper of the stock running. Another feature is the blanket cylinder lock which holds the cylinder while the pressman tightens the blanket.

Safety features include master stations positioned at the operator's side and also at the delivery end. A catch on the delivery end prevents press from running whenever the guard protecting the pressman from the plate and blanket cylinders is removed.

For further details, please mention PEE No. 512 in your request.

SPEED PRODUCTION with
RICHARDS' PRECISION
SAWS • ROUTERS • MORTISERS

For further information on these and other
RICHARDS EQUIPMENT,
Saws — Routers — Mortisers, please write

Code: PMRS
'MULTIFORM' RADIAL ROUTER
For Straightline and Fine Detail Routing
Patented Straightline Control Feature

'ELECTROMATIC' SAW TRIMMER
For Stereotypers, Electrotypers, Photoengravers
Code: EST-27x36 Table
ESST-32x42 Table

NEW MODEL
Code: M2-B
ENCLOSED CURVED PLATE ROUTER
with new close coupled single belt drive
Ball bearing construction throughout
Price $1875.00 complete

J. A. RICHARDS COMPANY
903 N. PITCHER STREET • KALAMAZOO, MICHIGAN

Set it . . . and forget it

that's the Hurletron Automatic Register Control

With the new Auto-Register, bringing a color press into register . . . and keeping it there . . . is simpler and easier than ever before. For example . . . the initial registering-in is a simple manual operation done by means of push buttons on the master control panel. With the Auto-Register feature, the Hurletron follows the pressman's corrections automatically. Then . . . when he has it "on the head" . . . when all the lights on the panel are out . . . he simply throws the switch from "Auto-Register" to "Automatic."

From then on the Hurletron takes over. Even the most minute out-of-register conditions are noted . . . transmitted to the compensating mechanism . . . which brings the press back into register before the error is visible to the human eye.

That's Hurletron Automatic Control with the new "Auto-Register" feature. It's accurate . . . dependable . . . at all operating speeds throughout the run. It's the equipment that is making R.O.P. Color more profitable for leading dailies . . . improving printing quality . . . saving time . . . cutting costs.

Ask for your copy of our new booklet on Register Control for R.O.P. Color. There's no obligation.

HURLETRON Automatic Register Control **for R.O.P. Color**

ELECTRIC EYE EQUIPMENT COMPANY

1930 EAST FAIRCHILD STREET, DANVILLE, ILLINOIS

Manufacturers of: Hurletron R.O.P. Color Registration Controls; Automatic Controls of Caliper and Weight on Paper and Board; Center Line and Side Web Guide Controls; Cut-Off and Back-Up Controls; Slitter Controls; Moisture Controls.

Equipment & Supplies

(Continued from Page 6)

bered. This was the opinion of Thomas J. Craig, technical director of Sun Chemical Corp. Craig made his statement in observing the 10th Anniversary of the introduction of Gum Arabic Solution RT 782.

"In the old days, before the growth of reliable lithographic supply houses, the offset printer carried his formulae for gum solutions, plate coatings, fountain solutions and other materials in his hip pocket, together with his chewing tobacco. The result often was and still often is, for those who follow the same system, unsatisfactory performance," Craig said.

"In the past 10 years, purchasers of RT 782 gum solution have learned the value of close quality control production, and of utilizing high-grade select gums and other ingredients. The resultant quality and uniformity invariably is excellent. Streaking of plates or souring of gum in storage, for example, are things of the past," he said.

"The total number of offset printing establishments has more than doubled in the past four years," Craig pointed out, "going from 5283 to 10,569. Some of the older organizations are still sticking to their secret formulae and systems, but their number is decreasing rapidly. Within 10 more years I am certain we will have convinced almost all of these holdouts of the advantages of quality controlled materials," Craig predicted. When requesting further information, please mention PEE No. 498.

Perfect Companion of Skilled Craftsmanship

Imperial Zinc

Good results depend upon the skill and experience of the etcher. But the sheet of zinc plays an important part. Imperial Zinc is the perfect companion to your etcher's skill.

Imperial REGULAR
(Green Redibak)
Meets the requirements for all usual applications.

Imperial DURAPLATE
(Orange Redibak)
Alloyed for extra heavy duty. Unusually resistant to buckling.

Engraved on Imperial Zinc — 110 Screen.

IMPERIAL TYPE METAL COMPANY
Also distributors of magnesium sheets
SERVING THE GRAPHIC ARTS *Exclusively*
CHICAGO 50 • NEW YORK 7 • PHILADELPHIA 34
IN CANADA: LATIMER, LIMITED, TORONTO 2-B

NEWS ITEMS

Chief Executive Officer Appointed—Harry G. Willnus, president of Intertype Corporation since May 1952, has become chief executive officer of the company, succeeding to the post held by Neal Dow Becker, who died recently. At a meeting of the board of directors, the by-laws were amended designating the president as chief executive officer, abolishing the office of chairman of the board. Alden T. Mann, jr., vice president for many years, was elected executive vice president.

WILLNUS

MANN

CARR

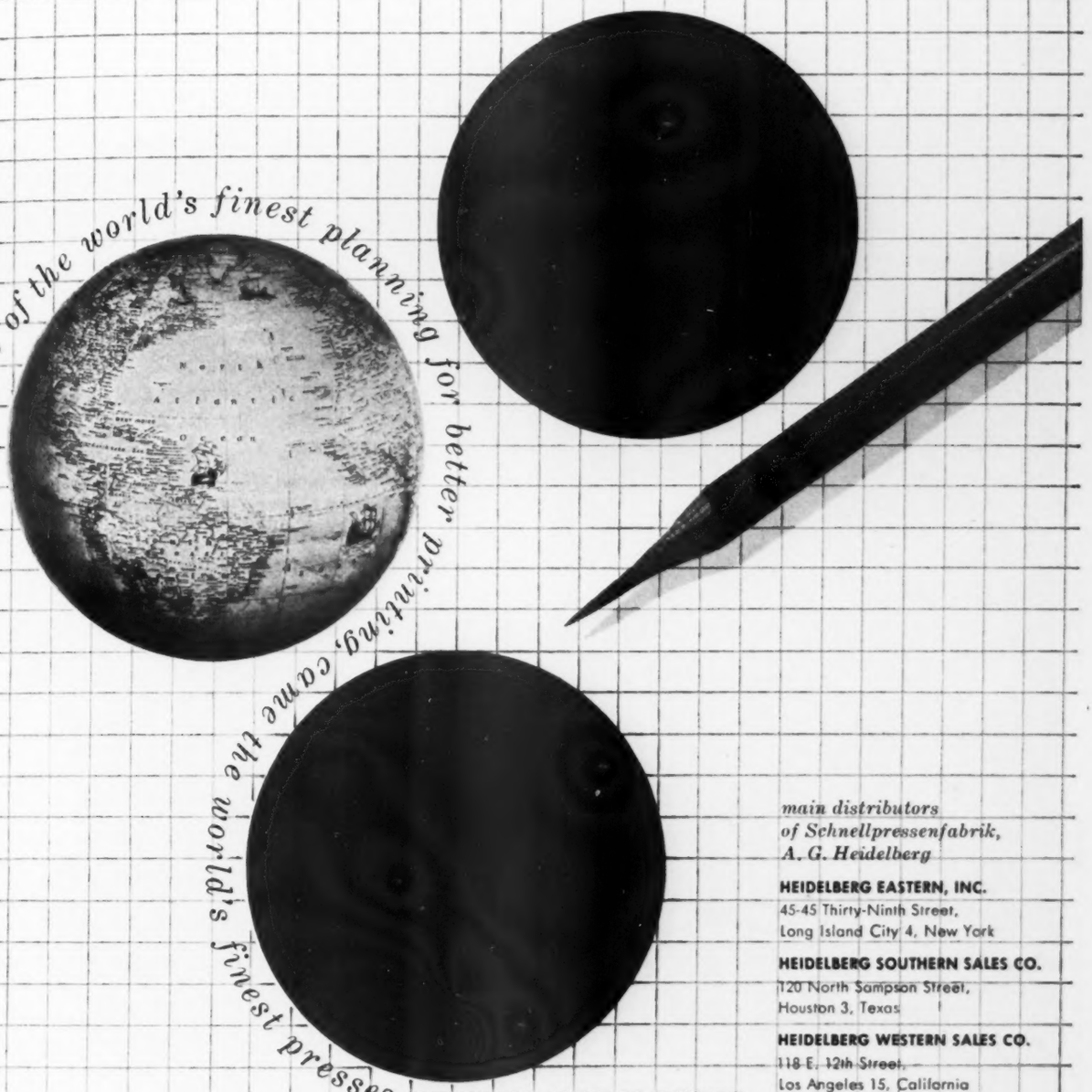
Head of Marketing for ATF—J. C. Carr, formerly advertising manager for American Type Founders, has been promoted to the position of director of marketing for ATF, according to a recent announcement by R. A. Tobias, vice president in charge of sales. This position was held by Tobias prior to appointment as vice president of sales. All market research and advertising activities will be under the direction of Carr.

WOOD

Alan Wood Steel President — The board of directors of Alan Wood Steel Co. recently announced the election of Harleston R. Wood as president and chief executive officer, effective Aug. 1, 1955. Wood will succeed John T. Whiting who has been president of Alan Wood Steel since 1939 and president and chairman of the board since 1941. Whiting will continue as chairman of the board and a member of the board of directors. Prior to his election as president, Wood was vice president in charge of planning and development. Wood joined the company in 1938.

James P. Rogers, former assistant plant and production engineer for Hearst newspapers, has been appointed production engineer for the Washington (D. C.) *Post* and

(Continued on Page 12)



out of the world's finest planning for better printing, came the world's finest presses ORIGINAL HEIDELBERGS

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the best thing next to a printer

TO HONOR AND COMFORT OUR FRIEND

Lex Claybourn

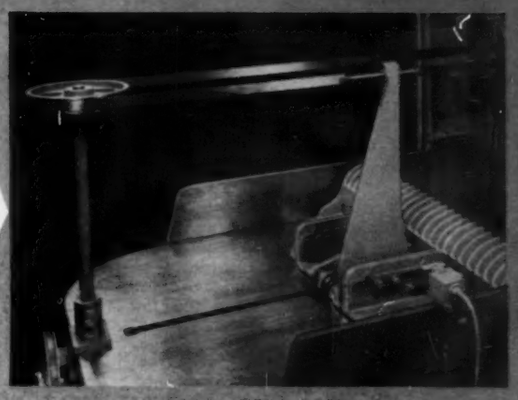
When a strong and rugged fellow suddenly becomes incapacitated, he is very likely to feel that his friends have deserted him—even though this is not true. None of us wants Lex to feel that way, and our main purpose in establishing a Claybourn Fund is to let him know that thousands of his friends all over the world are thinking of him, praying for him and assuring him through our concentrated thoughts that we're in his corner and plugging for him to win this fight.

The amount you may be able to donate to the Claybourn Fund is not of vital importance —we would like to build it as high as possible —but the principal idea behind this movement is to GIVE OF OURSELVES in transmitting to Lex OUR SINCERE LOVE to a GREAT GUY, who through the years has been a benefactor to the Graphic Arts Industry, and deserves to be honored as such.

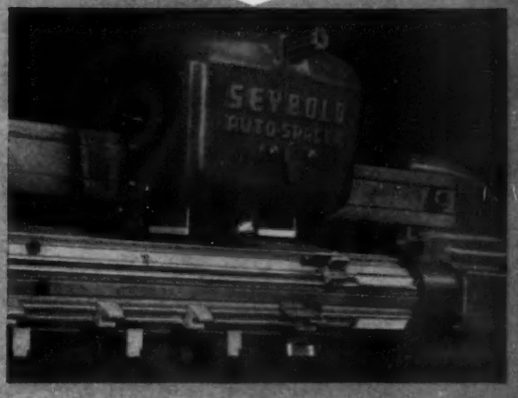
Checks should be drawn to the Claybourn Fund—W. S. Reed, Chairman and sent to Earl Reed, c/o Dexter Folder Co., 330 W. 42nd St., New York 36, N. Y.

BASIC CUTTER
Manual Back Gauge

ADD
Power Back Gauge



ADD
Auto-Spacer



Presenting Seybold Saber

41", 47", 54" power paper cutters that grow with your business

Here's a brand-new design concept: cutters that *grow* with the changing requirements of your business. Even major transitions can be made in your own plant. Interlocking construction of the completely new Seybold Saber makes this possible.

Suppose you start with a basic manual back-gauge cutter. As your business expands, and your cutting requirements change, you can convert it to a power back-gauge machine, and later to an Auto-Spacer. Or, you can change it directly from a basic cutter to an Auto-Spacer.

You can also add optional equipment. Some of it is listed below.

Growth potential, however, is only one benefit. Advanced design features include a fully hydraulic clamp, improved cutting stroke, 2-hand electric throw-in, electromagnetic clutch and brake, six-sided spacer bar and many others.

Call your Harris-Seybold representative for complete details. Or, mail the coupon for a descriptive brochure.

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SEYBOLD CUTTERS

Harris Presses • Seybold Cutters • Harris Litho-Chemicals
Special Products • Cottrell Presses • Platemaking Equipment
Macey Collators

ADD OPTIONAL EQUIPMENT WHEN YOU NEED IT

- **For Operator Efficiency**
  - "Work Flow" Air-Film Table
- **For Fastest Possible Cutter Mass Production**
  - Extra Spacer Job Strips and Stops
  - Special Minimum Successive Cut Stops
  - Extra Reverse-Forward Assemblies
- **For Maximum Cutting Accuracy**
  - Clamp Pressure Indicator
  - Detachable Clamp Sole Plates
- **For Minimizing Non-chargeable Time**
  - Cutting Stick Knockout
  - Plastic Cutting Stick
- **For Book, Pamphlet Trimming**—Split Back Gauge

Harris-Seybold Company
4510 East 71st St., Cleveland 5, Ohio

Please send your descriptive brochure about the all-new Seybold Saber . . . that grows with my business.

Mr. _____

Company _____

Address _____

City _____ Zone _____ State _____

News Items

(Continued from Page 8)

Times Herald by Harry Eybers, production manager. Although the Washington Post Building was completed December 1950, expansion plants are necessitated by the Post's purchase of the Times Herald in March 1954.

Weir Retires After Long Service—J. W. Weir, Cleveland district manager of The Timken Roller Bearing Co., Industrial Division, has retired after 36 years of service. Weir began his employment in October 1919 as an engineer, working on plant layout and machine design.

CROPLIS

BINK

TAYLOR

JOHNSTON

Four Sales Managers—American Type Founders, Inc. recently announced the appointment of four new regional sales managers. Louis A. Croplis has been appointed regional sales manager of the eastern region, with headquarters in New York, N. Y. Croplis has been with ATF for 28 yrs. and was most recently in charge of the Cincinnati, O., office. Arthur R. Bink is the manager of the midwestern region with headquarters in Chicago. Bink joined ATF in 1933, and prior to this change, was manager of the Atlanta, Ga., branch office. William J. Taylor has been given the post of manager of the southern region, with headquarters in Atlanta, Ga. Taylor joined the company in 1945 and has held various sales positions, most recently being manager of the Cleveland branch. Willis C. Johnston has been appointed manager of the Pacific region. Headquarters for this region are in San Francisco. Johnston has been with ATF for 25 yrs. and was formerly manager of the San Francisco branch.

ELIMINATE REPRODUCTION COMPLAINTS with

TINGUE
TRADE MARK
PRINTING PRESS BLANKETS

ALL PRINT EQUALLY WELL with TINGUE Printing Press Blankets . . .

The bugaboos of printing—the ones that bring customer-complaints—are kept to a very minimum with TINGUE, BROWN press packings.

ALWAYS FAST, DEPENDABLE DELIVERY!

COMBINO—An extremely durable clean printing laminated blanket. Gauges .062", .072", .083", .093".

TOP DRAWSHEET—Is firm, durable, economical and of long life. Gauges .016", .025", .030".

CUSHION CORK*—A highly resilient underpacking. Gauges .055", to .085".

TINGUCORK*—Much firmer than "CUSHION CORK" and preferred where precision plates are available. Gauges .032", .055", to .085".

FOUNDATION—A firm, durable, oilproof underpacking laminated by duPont with "Neoprene." Gauges .032", .040", .050", to .085", .120".

COATED TYMPAN PAPER—The coating by The Carborundum Co. gives better register and measurable savings in down time on runs over 50,000.

Tingue Coated Felt—Uncoated Wool Felt—Gold Tympan Drawsheet—Improved Satisfaction—Sterling—Korker Under Blanket.

TINGULOK—This great new "clipper lacing" method is the simplest system for blanketing rotary newspaper presses.

*Reg. U. S. Pat. off.

TINGUE, BROWN & CO.

723 E. Washington Blvd., Los Angeles 21, Calif., PRrospect 6023
507 Bishop Street, N.W., Atlanta, Georgia, ATwood 3864
1227 Wabash Avenue, Chicago 5, Illinois, HArrison 7-0083
1765 Carter Avenue, New York 57, N. Y., CYpress 9-8800

CANADIAN SALES AGENTS ROSS WHITEHEAD & CO. LTD. MONTREAL, CANADA

WENTWORTH

Miller Chicago Representative — F. G. Betlock, western division manager, Miller Printing Machinery Co., has announced the appointment of A. S. Wentworth as Miller representative in the Chicago area. Wentworth attended the Carnegie Institute of Technology and is a graduate of the School of Printing Management.

Fairchild Board of Directors—Leon T. Eliel was recently elected to the board of directors of Fairchild Camera and Instrument Corp., as announced by Sherman M. Fairchild, chairman of the board. Eliel is president of Fairchild Aerial Surveys, Inc. Other directors, in addition to Fairchild and Eliel, are Theodore H. Carlson, John H. Clough, Charles H. Colvin, William R. Crawford, jr., William C. Franklin, Clark H. Minor, William B. Scarborough and Rupert T. Zickl.

AVERY

New Ideal Sales Office—Ideal Roller & Mfg. Co. announced both the termination of its association with Wild & Stevens, Inc. as exclusive distribution agency for Ideal products in the New England area and the opening of a branch sales office at 32 Church St., Wellesley, Mass. Joseph Avery and Edward Bellone, former company representative in the New York, N. Y. and Long Island area, have been appointed to the new branch office. Avery is a former presi-

(Continued on Page 67)

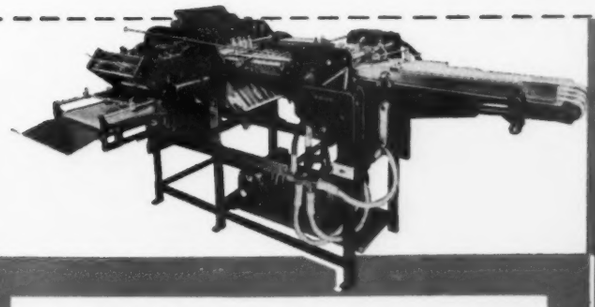
Trimming Gang Run Booklets

View of the bindery department of the Greater Buffalo Press, Inc., showing the Brackett Safety Trimmer in operation.

AT THE GREATER BUFFALO PRESS, INC,

A Brackett Safety Trimmer was used to trim three sides and cut apart millions of Davy Crockett comic books, 7 x 3½", printed and stitched six-up. The Brackett produced an average of 24,000 booklets per hour . . . beyond question, the fastest, most economical trimming method. One operator fed the machine . . . it required 6 to take off and stack the product!

The same machine was used to trim and cut apart 20,000 copies per hour of the 7 x 10" Davy Crockett coloring books, which were stitched two-up. Shifting from one job to another on the Brackett does not require tedious positioning of knives or gauges. The Brackett spacer shaft pre-set for a particular job is slipped into place and the trimmer is ready to run.



On two model "WW" Cleveland Folders similar to the one shown above, located in the Rapid Bindery plant, Buffalo, N. Y. a single fold was made to finish these Davy Crockett comic books. Another example of the versatility and dependability of Cleveland Folders . . . the original buckle folder.

The Brackett Safety Trimmer is manufactured, sold, and serviced by the Dexter Folder Company. A "Brackett Production Data File" booklet showing production rates on trimming of booklets, paper, labels, etc., has been prepared. Copies are available upon request . . . without obligation, of course.

DEXTER FOLDER COMPANY

General Sales Office

330 West 42nd Street New York 36, N. Y.

RISING STAR IN *Headliner*® GALAXY

PHILADELPHIA DAILY NEWS

GOSS

"*Hitch your wagon to a rising star,*" advises the PHILADELPHIA DAILY NEWS, the progressive and popular evening tabloid in the City of Brotherly Love.

Carrying on the traditions of Benjamin Franklin—presenting the live news in which people are interested in a sparkling fashion, enterprisingly building up advertising linage, and attending to practical publishing details efficiently—the PHILADELPHIA DAILY NEWS' ringing modern note is arousing enthusiastic response among readers and advertisers.

The DAILY NEWS is the "only daily in Philadelphia that's growing" in circulation. Advertising linage is now at an all-time high.

Heeding its own advice, the PHILADELPHIA DAILY NEWS hitched its own bright star to the ever-increasing HEADLINER galaxy, ordering 10 HEADLINER units and two folders, with four single color cylinders (printing four different colors across the same cylinder), Tension Plate Lockup and Goss REELS-TENSIONS-PASTERS.

With its new HEADLINER presses, the PHILADELPHIA DAILY NEWS' star will rise still higher by delivering later news much faster than previously, and increasing the size of editions while offering advertisers ROP full color.

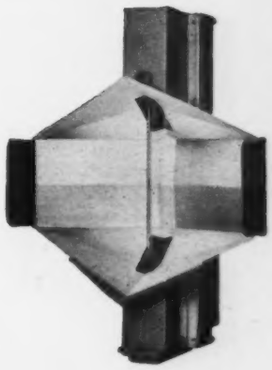
WORLD'S LARGEST MANUFACTURER OF NEWSPAPER, MAGAZINE AND ROTOGRAVURE PRESSES

The Strong Team

cuts plate-making exposure time in half

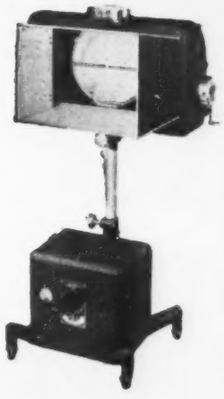
Challenger Camera Arc Lamp

Vertical trim. Burns at 75 amperes and 23 volts at the arc. Readily mounted on lamp support arms of any camera.



Grafarc 140 Ampere Printing Lamp

For use with vertical printing frames 40″ x 50″ and larger.



Grafarc 95 Ampere Printing Lamp

For use with vertical printing frames under 40″ x 50″.

Strong Grafarc Arc Lamps

FULLY AUTOMATIC • HIGH INTENSITY

- ★ **Uniform coverage of large areas.**
- ★ **Constant color temperatures.**
- ★ **Power to punch through dense Kodachromes.**
- ★ **Accurate control of densities, regardless of line voltage variations.**
- ★ **Sharper reproduction.**
- ★ **Eliminate illumination variables.**
- ★ **Eliminate dot undercutting.**

Overhead model printing lamps available for use with horizontal printing frames. Burn in normal position, avoiding smoking of reflector and preventing ash from depositing on surfaces in the light path.

Models for Monotype Huebner MH photo composing machines assure precise control of intensity for accurate repeats.

Send for free literature
or arrange for a demonstration by your dealer.

THE STRONG ELECTRIC CORPORATION

307 CITY PARK AVENUE • TOLEDO 2, OHIO

Please send free literature on Strong Grafarc Lamps.

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A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

Maintain constant speed with G.E.'s ACA press drive

You get adjustable speed direct from a-c power, controlled acceleration to the speed you choose

Steadier production and more good sheets on the delivery pile are yours when your press is equipped with a General Electric adjustable speed ACA press drive. You maintain constant press speed because this drive gives you controlled acceleration to the exact speed you choose **and holds it**—regardless of differences in weight of paper, tackiness of inks, or other load changes. This frees your operator from frequent speed adjustments during the run, cuts sheet spoilage as well.

You save floor space and maintenance costs too, because the entire ACA drive can be press-mounted, speed control is self-contained in the motor, and bulky conversion equipment is eliminated.

Next time you buy a commercial printing press—offset or letterpress—specify a G-E ACA press drive. For more information, contact your nearest Apparatus Sales representative, agent or distributor, or write for Bulletin GEA-5568 to General Electric Company, Section 653-35, Schenectady 5, New York.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Announcing

the all-NEW . . . . . .

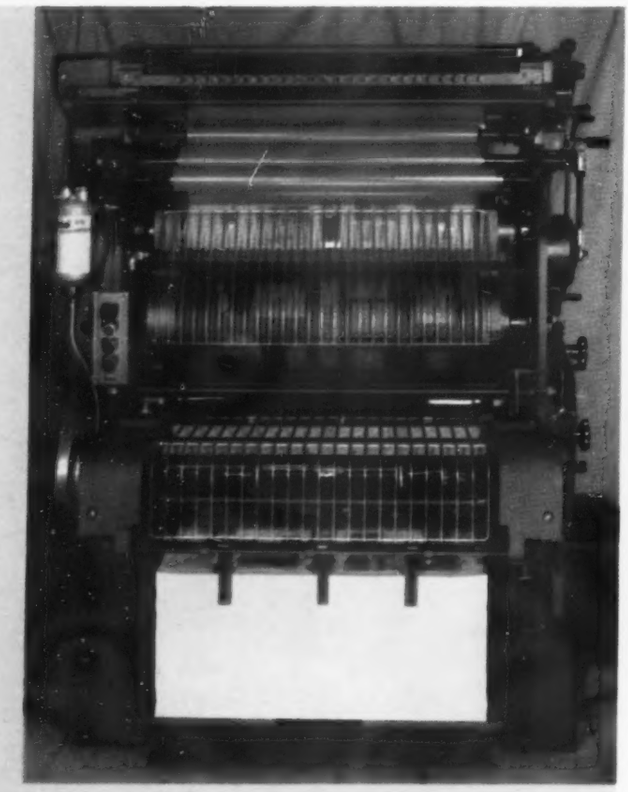
ATF *Super Chief* . . . . . .

. . . the finest, most productive offset press in its class

Here it is... the all-NEW

Five big advantages make the ATF Super Chief the finest, most productive press in its size range

MOST PRODUCTIVE PRESS High top speed of 7000 iph, combined with many operating features that insure steady, uninterrupted performance, make the Super Chief the most productive press in 29 in. size range. Among the features that add up to uninterrupted performance are the simple, trouble-free, easy-to-set controls for speed, register, and impression. All can be adjusted while the press is running! Other factors that contribute to high production are the Super Chief's semi-automatic lubrication, the quick-action wash-up attachment, and the easily set feeder that permits fast getaway and reduces lost time in starting or changing jobs.



FINEST QUALITY PRINTER First reason you get top quality production with the Super Chief is its outstanding 19-roller inking system that provides adequate ink break-up and coverage for the heaviest forms. Another quality builder is the highly accurate but easily set register control mechanism. And the stepless speed control—located right on the press—can be adjusted quickly and easily for the exact speed the job demands. Cushioned step-up of speed insures better register control during speed changes.

EASIEST PRESS TO OPERATE Two elements combine to make the Super Chief easier to operate: its compact structure and its easily accessible, easily identified controls. Because of its compactness, one pressman can follow the sheet easily, right through from feeder to delivery. And the readily identified, colored control buttons are centrally grouped to give the pressman quick, convenient control. All controls and adjustments—even attaching the plate and blanket to the cylinder—can be handled by one man.

MOST VERSATILE PRINTER The Super Chief can handle sheets from 10 x 14 to 22½ x 30 in.; weights from onion skin to .030 card. Optional sheet- or stream-feed, sensitive sheet chokes, adjustable head stops and sheet slow-downs make changeover easy, regardless of stock. And with double-wheel pull side guides, the Super Chief maintains critical register over a wide range of stocks.

MOST COMPACT PRESS The Super Chief was carefully designed to provide enough room for all desirable operating features, without taking up unnecessary floor space or becoming clumsy and too large for easy handling. Its 53.2-sq.-ft. floor space requirement makes it the most compact and undoubtedly the easiest press in its size range for one man to handle.

ATF Super CHIEF

Super Chief HIGHLIGHTS

New Integrated Construction . . . saves space, cuts installation time and expense.

Exclusive ATF Built-in Speed Controls save up to $500 in installation costs.

New Cushioned Step-Up saves lost sheets and insures close register through speed changes.

Improved Inking System with special ink-receptive copper-plated steel rollers.

Improved Control Design and Coloring gives easy, quick, safe operation.

Special Pull Side Guides and double register wheels provide close register for any stock.

Improved Sheet Slow-Downs, with individual pressure adjustments, contribute to fine register.

All-New Three-Part Spring Grippers transfer sheet smoothly from register plate to cylinder.

Special-type Plate Clamps — four on each plate bar — permit fast, easy plate attachment.

Prelubricated Bearings—including 78 sealed for life—cut maintenance time and expense.

Designed and Manufactured in U. S. A.

CHIEF

The new Super Chief is
of, too, once it goes to w

It's the result of about
of ATF engineers, back
design and manufacture

It's a completely re-
demands for low-cost,
field-tested for over a ye

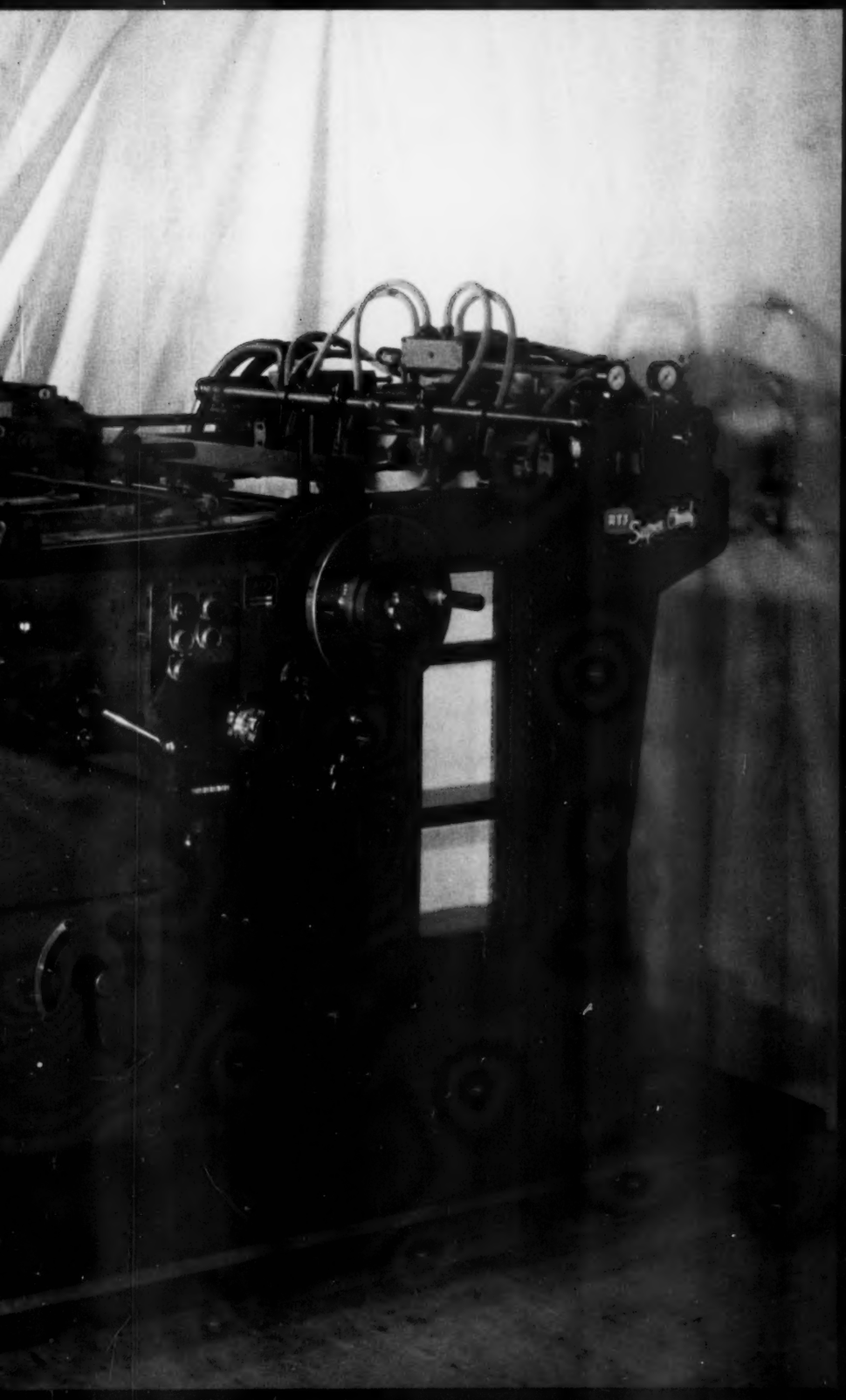
We at ATF think it's t
range ever built. You'll s

er Chief is a press we're proud of at ATF—one you'll be proud goes to work for you in your plant.

of about five years of intensive development work on the part ers, backed by almost a quarter-century's experience in the nufacture of offset presses.

etely re-thought, redesigned press, geared to present-day ow-cost, high-volume production. Prototype units have been over a year in commercial printing plants.

hink it's the finest, most productive offset press in the 29 size t. You'll see some of the reasons why on these pages.



Before you take a look
Super Chief itself, rea
press facts

ATF SUPER CHIEF SPECIFIC

PRESS SPEED

Maximum	7000 iph
Minimum	2800 iph
Speed control	Adjust-O-Matic Stepless

SHEET SIZE

Normal sheet	22½ x 29
Maximum sheet	22½ x 30
Minimum sheet	10 x 14
Printing area	22⅛ x 29½
Plate size	27¼ x 30

STOCK HANDLED

Heaviest stock	.030 in.
Lightest stock	9 lb onion skin

PRESS CAPAC

Feeder capacity	
Feeder capacity	
Delivery capacity	

INKING SYST

Ink rollers	
Water rollers	

PRESS DIMENS

Width	
Length	
Height	

SEE IT ON DISPLAY

The all-new ATF Super Chief will be on display soon at ATF Equipment Display Centers in:

NEW YORK
PHILADELPHIA
ATLANTA
CLEVELAND
CHICAGO
DALLAS
SAN FRANCISCO
LOS ANGELES

WRITE FOR

Send coupon for y
colorfully illustrat
the all-new ATF S

GET THE
FROM YOUR LOC

ok at the new
read these
cts

CIFICATIONS

CAPACITY

apacity . . . . . 36 in. floor loading
apacity . . . . . 30 in. reloading
capacity . . . . . 19 in. capacity

G SYSTEM

s . . . . . Total—19
llers . . . . . Total— 5

DIMENSIONS

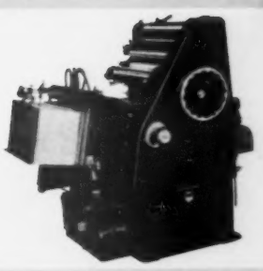
. . . . . 78½ in.
. . . . . 97½ in.
. . . . . 70½ in.

RITE FOR NEW BOOKLET

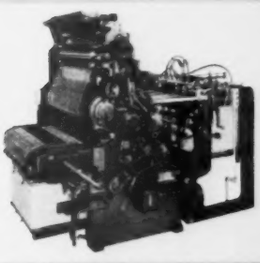
oupon for your copy of fact-jammed,
lly illustrated 16-page brochure on
new ATF Super Chief and . . .

GET THE COMPLETE STORY
YOUR LOCAL ATF REPRESENTATIVE

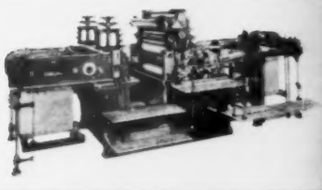
select
. . . th



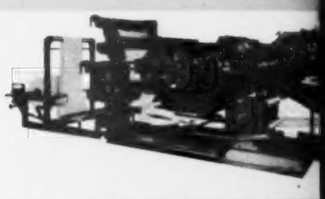
ATF Chief 20 (14 in. x 20 in. sheet)



ATF Chief 29 (22½ in. x 29 in. sheet)



ATF Mann Single Color Presses



ATF Web-Fed Presses (web width

American Type Founders, Inc.
200 Elmora Avenue
Elizabeth, New Jersey

Dear Sirs:

Please send me copies of the following booklets

The new 16-page, 4-color brochure on the A

Chief 20 ☐ Chief 22 ☐ Chief 24 ☐

Mann Perfector ☐ Two-Color Manns ☐ Wel

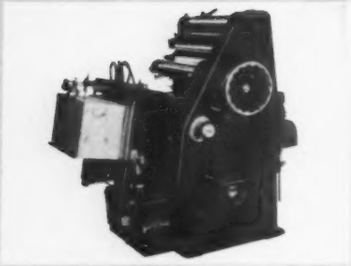
Name_____

Firm_____

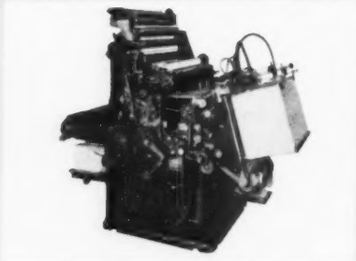
Address_____

City_____ Z

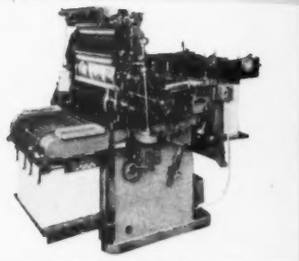
select your next offset press from ATF
...the world's broadest line



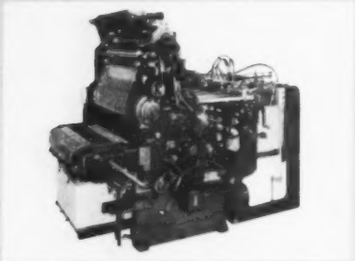
ATF Chief 20 (14 in. x 20 in. sheet)



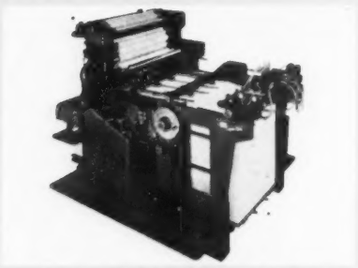
ATF Chief 22 (17½ in. x 22½ in. sheet)



ATF Chief 24 (17¾ in. x 24½ in. sheet)

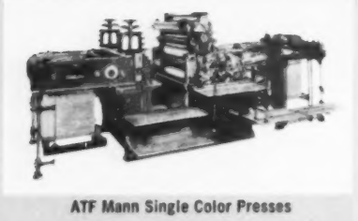


ATF Chief 29 (22½ in. x 29 in. sheet)

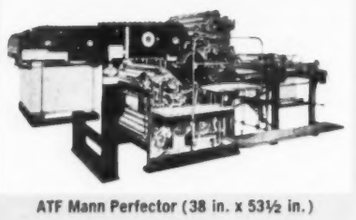


ATF Super Chief (22½ in. x 30 in. sheet)

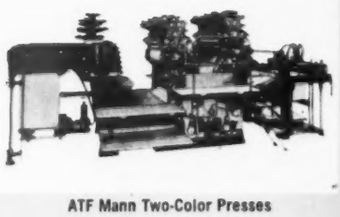
An all new
ATF Mann N135
will be announced
August 1.
Watch for it.



ATF Mann Single Color Presses



ATF Mann Perfector (38 in. x 53½ in.)



ATF Mann Two-Color Presses

ATF Web-Fed Presses (web widths to order)

The complete story on any ATF Chief, Mann or Web-Fed Offset Press is yours for the asking. There's a booklet on each one, showing features and specifications. Send coupon below for copies you want.

American Type Founders, Inc.
(A subsidiary of Daystrom, Inc.)
200 Elmora Avenue
Elizabeth, New Jersey

Dear Sirs:

Please send me copies of the following booklets:

The new 16-page, 4-color brochure on the ATF Super Chief ☐

Chief 20 ☐ Chief 22 ☐ Chief 24 ☐ Chief 29 ☐ One-Color Manns ☐
Mann Perfector ☐ Two-Color Manns ☐ Web-Fed Presses ☐ • • •

Name_____

Firm_____

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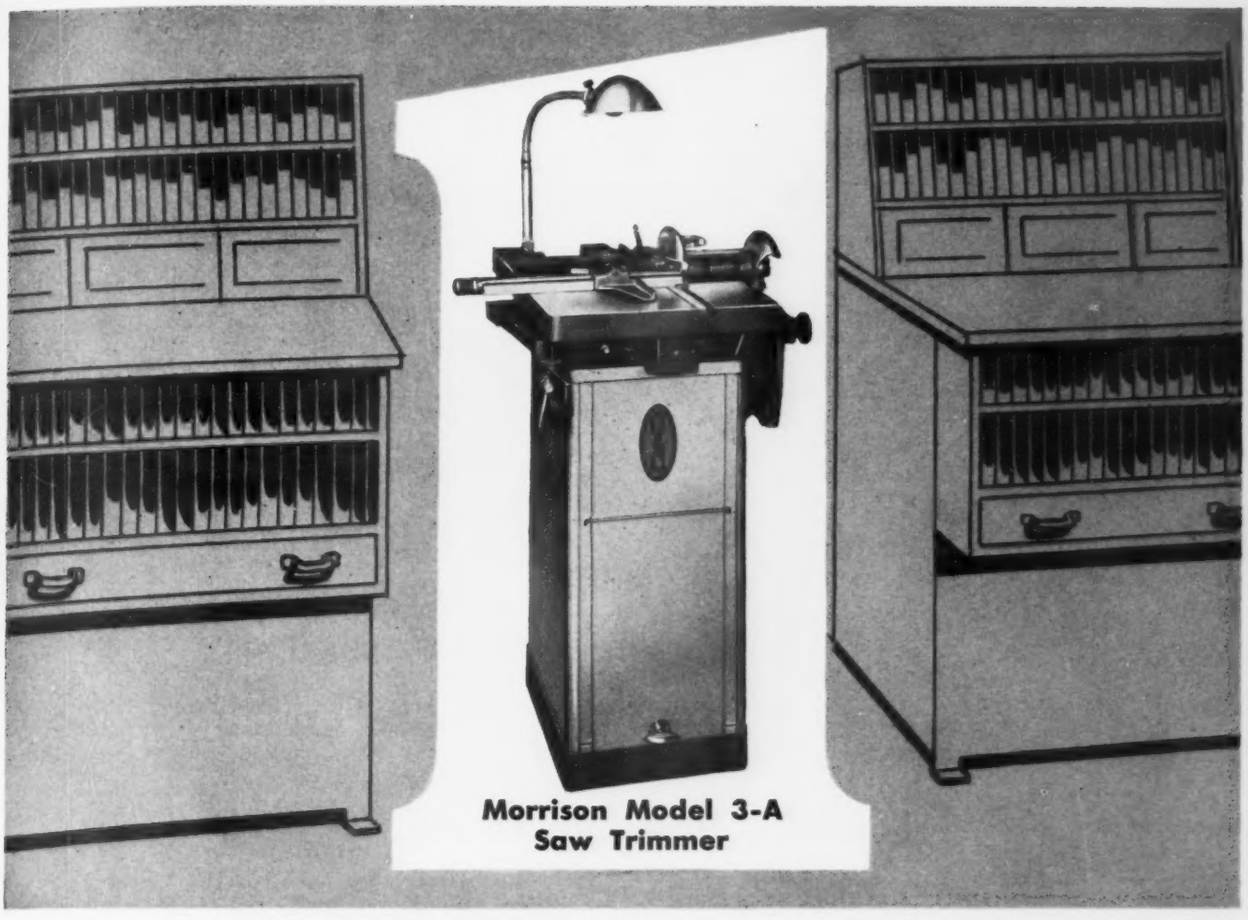
City_____ Zone_____ State_____

BETTER, MORE PROFITABLE PRINTING FROM THE WIDEST LINE OF PROCESSES

Gravure • Letterpress • Offset

Sheet and web-fed presses... composing room, camera and plate-making, press room and bindery equipment

Printed in U. S. A. on ATF Chief Press
CH 109—120M—4/55



Morrison Model 3-A
Saw Trimmer

ONE Morrison Saw Trimmer to EVERY TWO Make-Up Tables . . .

. . . The Nation-wide Standard of Composing Room Economy

MORRISON
MODEL 3-A SAW TRIMMER

Accepted standard in most composing rooms — versatile, fast and accurate. Features include: "Behind the Gauge" workholder, 73-pica gauge, 135-pica extension gauge, miter and line-up gauge, right and left hand miter vise, saw grinder, trimmer grinder, and others.

Leading newspapers and printers in New York, Buffalo, Chicago, Milwaukee,— across the nation — are changing "walking time" to "working time" in their composing rooms with Morrison Saw Trimmers . . . Adding a new Morrison Saw Trimmer every time they add make-up tables. They save wasted steps, time, and money by bringing trimming within a step or two of composition. More than that, they've proved that a Morrison is faster, more accurate, easier to use, safer — and more economical to operate.

Write for catalog on ALL Morrison Saw Trimmers — as well as Morrison Slug Stripper, Plate Beveler, Router and Type High Planer, Strip Material Cabinets, Waste Receptacles, Universal Saw Blades, Router Bits, and Jigsaw Blades.

Symbol of Operating Economy

THE MORRISON COMPANY MILWAUKEE WIS.

THE *Morrison* COMPANY

PRECISION MACHINES FOR THE GRAPHIC ARTS INDUSTRY

125 W. Melvina Street, Milwaukee 12, Wisconsin

MATRIX CONTRAST SERVICE Sells on Sight

Linecasting machine operators are sold because they "see what they set" without eyestrain. Publishers and printers stay sold because Matrix Contrast eliminates 25% of all errors in linecasting machine composition.

Matrix Contrast Corporation has been in successful operation for over 25 years, and today services leading publications from coast-to-coast through 6 conveniently located service branches and 31 trained service crews. The Matrix Contrast method is the time-tested system of processing your matrices in Black and White or Colors in your plant without interrupting your regular production schedules.

REMEMBER,

that Matrix Contrast Service is the economical convenient plan to keep your linecasting matrix reference marks clean and highly visible.

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Ways of Controlling Atmospheric Conditions in Printing Plants

By FRANCIS A. WESTBROOK

I.—WHY WE NEED CONTROL

PAPER made of wood fiber which has been given sufficient time in the beater to give it the strength usually considered desirable for printing leaves the paper machine with between 5% and 7% moisture, which is prime condition. It will remain this way if kept in an atmosphere where the relative humidity is between 55% and 65% at room temperature, say around 70 deg. F. and this is very important for several reasons.

If the relative humidity is higher than this the paper stretches, there are changes in the weight of the impressions, offsetting occurs, smudging due to slow drying of the ink and baggy makereadys take place. If the relative humidity is lower, the paper gives up some of its moisture, causing curling and it does not take ink as well as it should. Also low relative humidity increases the electrical insulating properties of the paper which results in the generation of static during printing operations, newsprint becomes brittle and tears easily and in binderies the folding of the paper is impaired. Excessively high or low humidity is also not good for the health of the workers.

The Register Problem

Furthermore, and perhaps most important of all, as paper stretches when its moisture content increases and shrinks when it decreases, good register is jeopardized unless preventive measures are taken to maintain constant relative humidity. Such changes take place in almost direct proportion to the changes in relative humidity. They are continually going on outdoors, frequently with very large variations which are always reflected indoors. It is also a fact that the diameters of composition printing press rollers vary with changes in relative humidity and cause changeable operating conditions. Excessive moisture also damages surface offset plates quickly because the base material is moisture absorbent.

Ink Behavior

The behavior of ink under varying atmospheric conditions is an extremely important consideration. As it dries mainly by absorption or oxidation it is sensitive to changes in relative humidity and temperature. If the moisture content of the paper is too high the printing is likely to appear to lack color. If the paper is too dry the printing may not be clear, or the ink may crystallize. Inks which dry by absorption may smudge if the paper is too wet and metallic inks act unpredictably when the relative humidity and temperature are not right.

R. h. and Temp. Go Together

When it is said that paper is in prime condition when it contains 5% to 7% moisture, this means an absolute quantity of water. It will remain in the paper if the relative humidity in the room is 65% at room temperature. But it must be understood that the ability of the air in the room to hold moisture increases with its temperature. The term relative humidity, expressed in percentages, means that the air is carrying, say, 55% of the moisture it is capable of holding at the stated temperature. In other words, relative humidity and temperature always go together.

Thus when cold winter air enters a heated room its relative humidity is very much lowered and everything in the room, including paper, gives off moisture to the air, or dries out. Consequently, if the paper to be printed is to retain the 5% to 7% moisture necessary to keep it in prime condition, it becomes necessary to introduce extra moisture into the atmosphere of the room—in other words, to provide for humidification.

On the other hand, in summer when the outside temperature is high and the moisture in the air also is high, there is often so much moisture present that the paper absorbs more than is desirable. This condition calls for de-humidification and becomes especially necessary in damp climates. To accomplish this is just as necessary as to add moisture in winter.

True Air Conditioning

From this it is plain that true air conditioning involves humidification or dehumidification and temperature control. Filtering of the air is also usually included. There are many instances where true air conditioning cannot be installed because of the expense, the small size of

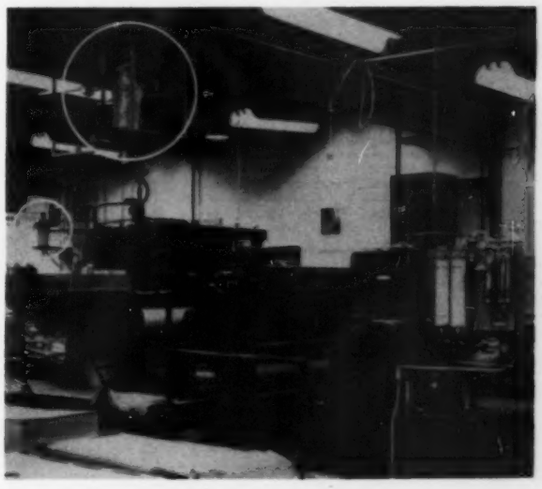

Fig. 1.—Playing card press in plant of Brown & Bigelow, St. Paul, Minn. The Armstrong Humidifiers are shown encircled with white ring.

Fig. 2.—View in finishing room of a paper mill. This type of Bahnson Humidifier is also used in printing plants.

the plant, or because of the physical conditions in old plants. However, even small offset printing plants have the same need for air conditioning as large ones and less expensive equipment is available for them.

The best atmospheric conditions vary considerably according to the type of printing, the original moisture content of the paper, and other considerations. In letterpress work this is usually 50% relative humidity and 80 deg. F., but for offset printing the humidity is often kept somewhat lower so that the plates will dry more quickly. Printing ceramic decals is usually considered desirable with relative humidity 65% to 70%, and for decal work on paper between 55% and 70%, in both cases with the temperature at about 80 deg. F.

The equipment employed to control atmospheric conditions in printing plants varies greatly, from comparatively simple humidifiers or de-humidifiers to the most complete central station air conditioning systems.

Humidification

An interesting installation of humidifiers is in the well planned printing department of the Beech-Nut Packing Co. The area where labels are printed was equipped with four Armstrong Machine Works steam humidifiers placed near the ceiling. A relative humidity of 50% at room temperature is maintained in the 250,000 cu. ft. space occupied. The atmosphere of the room is kept so that the paper in it is properly conditioned to avoid curling, to keep static at a minimum and to prevent paper distortion.

These humidifiers deliver pre-determined amounts of moisture in the form of steam with a fan to distribute it. A solenoid valve controlled by a humidistat closes when the relative humidity has reached the desired point, and opens when it drops below that point, so that their action is automatic.

In some plants, large sizes of Armstrong humidifiers without fans are used in the ducts of heating or air conditioning systems to supply moisture and also with large unit heaters of the floor type.

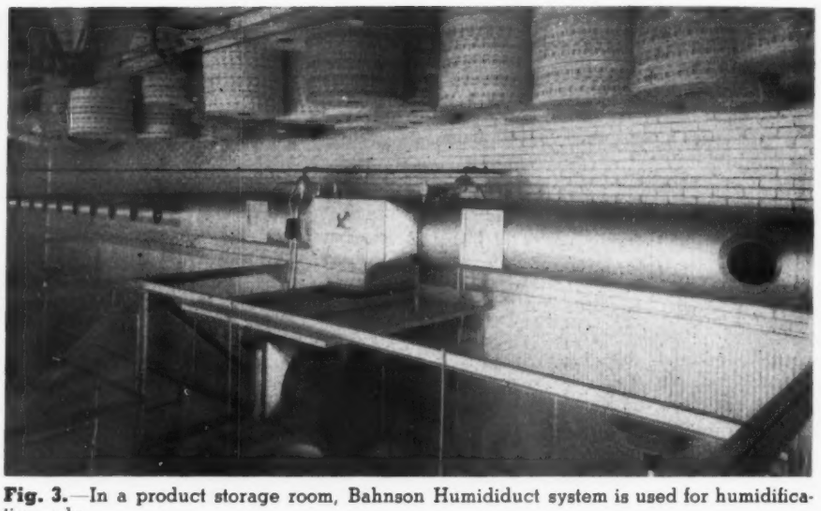

Fig. 3.—In a product storage room, Bahnson Humididuct system is used for humidification only.

Fig. 4.—View of Walton Centrifugal Humidifiers in a pressroom. (Photo courtesy Abbeon Supply Co.)

Similarly, Armstrong humidifiers with fans are used by Brown & Bigelow, St. Paul, Minn., which specializes in the printing of calendars and advertising work of all kinds. It uses some 20 million pounds of paper per year. When this paper is taken out of the warehouse it is first placed in the conditioning room where the temperature and relative humidity are kept the same as in the pressrooms. It remains there for whatever period is necessary for the kind of paper to be printed to absorb as much moisture as is required to place it in good condition. This room is equipped with two Armstrong steam humidifiers.

In the printing departments the 104 ft. long Talio-Crome gravure press is serviced by six humidifiers to keep the paper web in proper condition while it reproduces from one to eight colors at the rate of 10,000 sheets per hour with a register tolerance of 0.0001 inch. In Fig. 1 is shown a two-color offset press in the playing card factory where some 8 mil-

(*Continued on Page 72*)

The Claybourn Activity

THE influence of Lex Claybourn's ideals upon the Letterpress industry has been profound. Irrespective of any other condition, we want to add our little comment to that which has already been published in the Graphic Arts press. Lex is confined to a nursing home in Milwaukee and every wish of his powerful mind and bodily function is now dependent upon the response of attentive nurses. At the instigation of an old friend, Louis Flader (former commissioner of the American Photoengravers Assoc.) prominent men in the industry, led by Vice Pres. Walter S. (Bud) Reed of Dexter Folder Co., are now getting together a trust fund for Lex's benefit. Late reports indicate that over half of the projected fund has been raised voluntarily before general announcement to the Graphic Arts public was made. It seems that all those who are familiar with the Claybourn story will contribute more than enough to make it possible for Lex to live in as much comfort as possible under the circumstances. Meanwhile—the Lord willing—we hope to listen again to that sincerely booming voice in places where printing executives gather, Mr. Micrometer himself being the first to respond to the call for making Letterpress Printing an exact science.

Research and Engineering Council Functions to Help Plant Management

By MacD. SINCLAIR

PROBABLY the most satisfying annual meeting of the Research and Engineering Council was held at Somerset Hotel, Boston, May 11, 12 and 13. The reason for making this statement is that concrete results to help printing plant management were in evidence. First, there was the digest of Graphic Arts research activities in which it was demonstrated that many minds are at work to improve technology in the industry. There were first hand actual plant management experiences with two recently developed processes. There was also announcement and demonstration of two devices—one a new means for press ink distribution and the other was a press "automatic" makeready sheet designed to permit standardized press makeready in a plant even though more than one pressman is involved in making ready a job on one press. An important report, in reality an engineering report on plant equipment maintenance, was impressive. Attendance was disappointingly small, there being approx. 200 present.

Planning Committee Meets

At a meeting of the Planning Committee held concurrently with the Council's annual meeting, progress in a couple dozen industry wide research projects were reported. One of the most important was the report on materials handling with respect to the handling and storage of paper. Elliott Donnelley, vice president of R. R. Donnelley & Sons, Chicago, is chairman of the R&EC committee. With the cooperation of the American Assoc. of Railroads, various paper mills and a number of printers, it was announced that a revised draft of the report (which has been in preparation for three years) together with illustrations, is in the hands of the committee. Other projects were reported. Some of these are accuracy of count in the bindery, perfect binding of books, solvents and cleaners, dictionary of the Graphic Arts, elimination of the string tying of type, etc.

Engineering Option at Carnegie Tech

During the Planning Committee meeting it was announced that Carnegie Institute of Technology had accepted the proposal to add an engineering option to the Printing Management course. No details were given but will be announced later.

Olmsted Discusses Necessity for Research

After a brief address at the opening session on Thursday, May 12 by Council President John H. Davis, jr., the initial speaker was introduced. He was Pres. George Olmsted, jr., of S. D. Warren Paper Co. Olmsted asserted: "In order to keep your company's place in the sun you have got to do research." Quoting a statement made originally by Charles F. Kettering, the famous scientist, and which has appeared in variously different wording, he said: "Research is an organized method of finding out what you are going to do when you can't keep on doing what you are doing now."

He also added: "If you want to stay in business you can't stand still. What your competitor does, you have to do." The speaker said that research has made it possible for New England papermakers to manufacture paper from local hardwoods at costs as low as those of other regions in or adjacent to the U. S. Most experts agree it takes 15 years to get results from a research program. He thinks from 1960 to 1970 will be the golden era with respect to research results. He said research groups spend 60% of their time improving old methods and 40% on development of new methods. Warren has 60 people working in its research laboratories.

Research Reports

C. M. (Larry) Flint, formerly ANPA Research Director, but now head of the Graphic Arts Div. of Charles T. Main, Inc., Boston, made an exhaustive report of the R&E Council's research objectives in condensed form, of which there are approx. 22. (Editor's Note—these were published in *The R.&E. Coordinator* for April 1955. This is the Council's quarterly publication.)

Management Report On 3-Color Process

It seems to *Printing Equipment Engineer* that one of the primary functions of the R.&E. Council meetings is to hear printing plant management executives discuss their actual plant production experiences with new equipment, processes and/or methods. At the Boston meeting, there were two such speakers who gave extremely interesting accounts of their experiences—one with the Eastman three color short run color printing process and the other related to use of the Photon phototypesetting equipment used in combination with the Dow method for fast etching magnesium page plates at the Quincy (Mass.) *Patriot-Ledger*.

At this time, before introducing the management executive, the chairman called upon Lester Goda, jr., who explained the technical workings of the Eastman Short Run Three Color Offset-Lith Printing System. This method is designed for press runs ranging from 500 to 2500 copies. Goda explained that the features of the system include the use of specially selected inks, a

Research and Engineering Council Officers and Directors

At the May annual meeting of the Research and Engineering Council all of the executive committee members were re-elected. In turn, the directors re-elected the officers for another term. The officers are as follows:

President, John H. Davis, jr., Judd & Detweiler, Inc., Washington 2, D. C.
Vice Pres., Samuel F. Chernoble, The Comet Press, Inc., New York 14, N. Y.
Vice Pres., Felton Colwell, Colwell Press, Inc., Minneapolis 15, Minn.
Secretary, J. Homer Winkler, Battelle Memorial Institute, Columbus 1, O.
Treasurer, Joseph Schwartz, Westcott & Thomson, Inc., Philadelphia 5.

Executive Committee Members

Wayne Adams, Magill Weinsheimer Co., 1322 S. Wabash Avenue, Chicago 5, Illinois
Lee Augustine, Printing Machinery Co., Cincinnati 2, O.
Fred Baldwin, Dobeckmun Company, Cleveland 1.
William Baumrucker, jr., *Herald-Traveler*, Boston 12.
Peter J. Bernard, H. Wolff Book Mfg. Co., Inc., New York 1, N. Y.
Raymond Blattenberger, U. S. Public Printer, Washington, D. C.
James R. Brackett, Printing Industry of America, Inc., Washington 5, D. C.
Edward B. Busby, R. R. Donnelley & Sons Co., Chicago 16.
Joseph Chanko, Conde Nast Press, Greenwich, Conn.
Samuel F. Chernoble, The Comet Press, Inc., New York 14, N. Y.
Felton Colwell, Colwell Press, Inc., Minneapolis 15, Minn.
George Cornelius, jr., Cornelius Printing Co., Indianapolis, Ind.
John H. Davis, jr., Judd & Detweiler, Inc., Washington 2, D. C.
G. L. Erikson, Braden Sutphin Ink Co., Cleveland.
C. M. Flint, Chas. T. Main, Inc., Boston.
Wade E. Griswold, Lithographic Technical Foundation, Inc., New York 16, N. Y.
William D. Hall, Folding Paper Box Assoc. of America, Chicago 6.
Fred P. Hofferth, American Book Co., Cincinnati 2, O.
Alan S. Holliday, Craftsmen, Inc., Kutztown, Pa.
Clifford L. Jewett, Minnesota Mining & Mfg. Co., St. Paul 6, Minn.
Morris S. Kantrowitz, U. S. Govt. Printing Office, Washington, D. C.
W. A. Kindorf, jr., Interstate Printing Co., St. Louis 8, Mo.
Howard N. King, Maple Press, York, Pa.
Milton E. Kingsley, Providence Litho Co., Providence 1, R. I.
Paul Lyle, Western Printing and Litho. Co., Racine, Wis.
William R. Maull, The Mead Corp., Chillicothe, O.
Dellmore Moffett, Kalamazoo Vegetable Parchment Co., Parchment, Mich.
Dwight L. Monaco, Hughes Corporation, New York, N. Y.
John S. Odell, Radio Corp. of America, RCA Victor Div., Camden, N. J.
Frank F. Pfeiffer, Reynolds & Reynolds Co., Dayton, O.
A. J. Powers, jr., Chemco Photoproducts Co., Inc., Glen Cove, N. Y.
Roy W. Prince, American Newspaper Pub. Assoc. Research Institute, Inc., Easton, Pa.
George C. Schaefer, jr., George C. Schaefer Engraving Co., Los Angeles 26.
Joseph Schwartz, Westcott & Thomson, Inc., Philadelphia.
Victor Strauss, Presentation Press, New York, N. Y.
Paul J. Thoma, Time, Incorporated, New York 20, N. Y.
Edward J. Triebe, Kingsport Press, Inc., Kingsport, Tenn.
E. O. Vandercook, Vandercook & Sons, Inc., Chicago 45.
J. Homer Winkler, Battelle Memorial Institute, Columbus 1, O.
Harry G. Wolfe, Davis, Delaney, Inc., New York 10, N. Y.

Phototypesetting —Fast-Etching

single color correction mask and no handwork at any stage. Commercially available presensitized plates are used. Goda explained that his company has made available a 150 line Kodak Gray Screen for doing short run three color work commercially.

Felton Colwell, president of the Colwell Press, Inc., Minneapolis, Minn., and vice president of the R&E Council, related his company's experience with the Eastman short run three color offset-lith process. He exhibited many samples in brilliant color which had been done for customers. After 18 months of intensive work with the process, Colwell made an encouraging report.

Originally, stated he, it was decided to set up an entirely separate plant. One of the platemakers was sent to Eastman Kodak Co. to learn about the process. For a number of months the men manipulating the process made replicas of work previously done at the Eastman laboratories. At times, he related, lack of progress was discouraging. He described the equipment, such as an Exacta camera in the studio, the enlarger and the various kinds of lights. In the process, 35 mm. color film and offset-lith printing are used. Colwell explained that a good transparency is a necessity. The best camera man from the regular platemaking department was selected to do the work. He reported also that production must be streamlined so the operator won't have any interferences. Colwell stressed again that excellence of work is entirely dependent upon good photography. The process requires definite controls.

In answer to questions from the floor Colwell stated the process does not offer fast results. "It takes a lot of time and money to get into this field," he added. In response to another question, Colwell said: "When planning such a venture, the best way is to adopt a liberal budget, multiply that by two, take at least a year, and maybe you'll have something."

In reply to one of the questions, Colwell stated he uses 17 in. by 22 in. Harris press equipment.

Chairman Flint, with the aid of slides prepared with the cooperation of the Milwaukee (Wis.) *Journal*, presented an analytical discussion during which he compared etching qualities between zinc and magnesium. He compared loss in halftone dot diameters. The loss in processing is much less with magnesium than with zinc. He stated the dot diameter in magnesium really is established by the photographer which is a valuable asset in r.o.p. color reproduction.

Flint introduced C. M. Snyder, general manager of the Quincy (Mass.) *Patriot-Ledger*. Snyder discussed that paper's experience with Photon phototypesetting and the ANPA-Dow process for fast etching of magnesium. Through the use of slides, Snyder explained that the first approach to phototypesetting was in classified ad composition. Later, the editorial page was composed wholly on the Photon, and more recently, some display advertising is being done. All of the Photon composition is produced in flat plate form by ANPA-Dow process for fast etching of magnesium. The forms are molded and stereotype plates cast for the Tubular printing press.

A striking example as to how display advertising copy is handled was exhibited. The copy is typed line-for-line as it will appear in the paper. A markup man indicates the size of the body type and the display lines with pencil on the copy. The markup man, with the aid of a calculating machine, indicates on the copy the total depth of the ad, the sizes of type and the white space between the lines. The copy then goes to the Photon keyboard. Thus the marked copy serves both as copy and blue print.

All of the employees operating the Photon equipment have been trained locally. One of these is a man who strips up the film. Snyder related that one of the women operating the Photon machine learned to do so reasonably well in a week's time. Another learned to operate the machine in two weeks. He mentioned that the force has been made flexible to take up slack time by transferring from one task to another. Before installing the new equipment employees were informed about it and were assured that no employee would lose his or her job. Snyder said, in answer to a question from the floor: "We have had a considerable number of problems in making the combination of phototypesetting and fast etching work. But I see no real problems ahead in developing use of the Photon for straight matter and display advertising composition. . . . The combination of Photon, Film-O-Type and magnesium fast etching may yet bail newspapers out of the high cost situation."

Light and Paint Discussions

Illumination Design for Color Work was the subject of the address delivered by George W. Clark, Engineering Supervisor, Lighting Div.-Fixtures, Sylvania Electric Products, Inc. Four factors in lighting design have special significance, as follows: (1) Illumination level, (2) Brightness distribution, (3) Specularity, and (4) Spectral distribution. Clark discussed the problems involved in devising a standard lighting fixture for color matching. The customer and the printer's employees seldom see printed color under exactly similar light conditions. His demonstration by means of a light box showed how color varies when a subject is illuminated by different light sources.

Ralph R. Enghouser, also of Sylvania Electric Products, Inc., discussed lighting as related to seeing tasks in the printing plant. He showed two types of lighting fixtures which could be used for proofreading and/or composing room localized diffusion. The baffles reduced possibility of glare. The plastic housings and translucent reflectors are easy to clean. Especially the apertured reflectors which permit passage of air currents which prevent dirt collection.

Managing Director Robert E. Rossell made a report for Phil Tobias of the R&EC painting and lighting committee. "Because

Vandercook and 3M Demonstrate New Products

Two new products were exhibited and demonstrated at the Boston Research and Engineering Council meeting, May 12 and 13. The first of these is a new method of supplying ink to presses direct from the can. (*See article with illustrations in this issue of* Printing Equipment Engineer.)

The second development consists of a plastic coated press makeready sheet announced by Minnesota Mining and Mfg. Co. In this sheet, sponsor states, a press proof is taken on the plastic coated sheet. The proof is then placed in a special cabinet containing a drum which revolves slowly. As the sheet passes beneath a bank of infrared lamps, the black impression (printing image) accepts heat and the nonprinting areas, being white, do not. As the result of heat penetrating through the layer of black ink, the plastic coating is caused to swell to a height, in some cases, as much as 0.004 in. in the solid areas of halftones and type and in proportion according to the density of the proofed image. Claims made by sponsor are (1) That the process really is automatic with respect to makeready, and (2) Each pressman will prepare his makeready in the same standardized manner so that makeready operations on each press, or shift, will be alike and consistently uniform.

no two plants appraise color exactly alike, foot candle intensity is not entirely the answer. Shielding and brightness control are more important."

Francis Scofield, Asst. Technical Director, Natl. Paint, Varnish and Lacquer Assoc., discussed interior plant painting. He said: "You can't hang lighting fixtures without taking into account walls and ceilings." A wrinkle finish is not essential. There is no best gloss for a partition. He spoke on advantages and disadvantages of various finishes with their utility, adhesion, chemical properties and maintenance, especially with respect to cleanability.

Standardization of Controls and Signaling Devices

Another achievement of the Research and Engineering Council was demonstrated when Peter J. Bernard of H. Wolff Book Mfg. Co., New York, reported on the adoption of a report on Standardization of Controls and Signaling Devices, for which he was chairman of the B65-ASA Sectional Committee. Forcefully, Bernard explained the recommended system for electrical controls for operating printing machinery, particularly presses. He asserted: "There is no

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R&E Council Pictures from Boston Meeting

(All people identified from left to right)

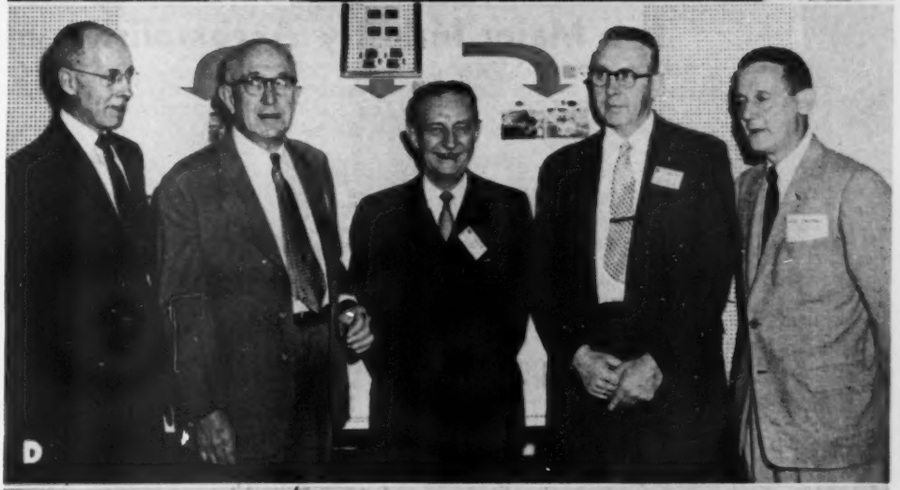
A.—Officers Re-elected—Dwight L. Monaco, chairman, annual meeting committee, Hughes Corporation, New York, N. Y.; Felton Colwell, vice president in charge of planning, Colwell Press, Inc., Minneapolis, Minn., Council vice president; John H. Davis, jr., Judd & Detweiler, Inc., Washington, D. C., president; Samuel F. Chernoble, The Comet Press, Inc., New York, N. Y., vice president; Robert E. Rossell, managing director, R&E Council; Secretary J. Homer Winkler of Battelle Institute, Columbus, O., was not available when this picture was taken.

B.—Martin Blumberg, American Book-Stratford Press, New York, N. Y.; James J. Trier, R. Hoe & Co., Inc., New York, N. Y.; Edward Nymark, production manager, MacLean-Hunter Pub. Co., Ltd., Toronto, Canada; D. H. Knowles, Goss Printing Press Co., Chicago; Frank Preucil, Chicago Rotoprint Co., Chicago.

C.—H. R. Behr, Cline Electrical Mfg. Co., Chicago; S. F. Chernoble, The Comet Press, New York, N. Y.; Ned Swazey, Dow Chemical Co., Midland, Mich.; Edward Busby, General Mgr., R. R. Donnelley & Sons Co., Chicago; William Baumrucker, jr., Boston (Mass.) *Herald-Tribune;* J. Homer Winkler, Battelle Memorial Institute, Columbus, Ohio.

D.—Reginald G. Tranter, Chas. T. Main, Inc., Boston; Harry D. Rindsberg, production manager, Cincinnati (O.) *Enquirer;* C. M. Snyder, general manager, Quincy (Mass.) *Patriot Ledger;* C. M. (Larry) Flint, director, Graphic Arts Div., Chas. T. Main, Inc., Boston; John V. Landau, Imperial Type Metal Co., Philadelphia.

E.—E. Bruce Kleber, Miehle Printing Press & Mfg. Co., Chicago; J. Gus Liebenow, J. Gus Liebenow Engineering Service, Chicago; M. S. Kantrowitz, Technical Director, Government Printing Office, Washington, D. C.; Dwight L. Monaco, Hughes Corporation, New York, N. Y.; Felton Colwell, The Colwell Press, Inc., Minneapolis, Minn.; Glenn C. Compton, Advertising Typographers Assoc. of America, Inc., New York, N. Y.



more justification for a certain make of Graphic Arts equipment to have different controls and signaling devices in Plants A and B than there is for any standard make car to have its clutch pedal on the right side and the brake pedal on the left. . . . The use of the American Standard Code B65,1-1954, just completed, will greatly reduce the accidents caused by mistaken operation of the wrong button." He advised that purchasers of new equipment should specify the new controls and should also apply them when overhauling work is done on existing equipment.

Light Weight Paper

Among the research reports presented before the annual May meeting of the R&E Council, Hotel Somerset, Boston, was an item regarding development of a light weight publication paper. The report was presented by Bus. Mgr. T. E. Redstone of Time, Incorporated's Springdale (Conn.) Laboratories. Redstone reported: "A so-called light weight paper, employing a calcium silicate filler, is now a production reality. This 40 lb. sheet has many of the same desirable characteristics of the formerly used 45 lb. sheet."

Controlled Web Drying

Another interesting Research Progress Report was made by General Mgr. Joseph Chanko of Conde Nast Press, Greenwich, Conn., on *Controlled Web Drying*. The report is as follows:

"A controlled web drying system developed for cooling webs and inking rolls on eight 64 page magazine presses has been in operation for about six months. The system provides cool water at the average of 55 deg. F. at 30 lb. pressure whether one press or eight are operating. It consists of two Centravacs, requiring 450 h.p., to reclaim and cool water, and a heat exchanger with water tower evaporation for winter operation. The entire system is controlled from a central station equipped with recording instruments which record the power used, as well as temperatures and pressure of the water at all times. In addition, each one of the 24 stations on each press which demand cooling are equipped with thermometers so that each pressman can determine at a glance whether or not his stations are receiving the cool water.

"The cost of the installation was approximately $160 thousand. Prior to the installation 500,000 gal. of water were wasted per day. With the system of reclaiming, only 5000 gal. are required per day. There are no reductions in operating charges. Cost of water was reduced by $12 thousand while power costs increased $16 thousand. However, a stabilized water supply is now assured. This is believed to be the first installation of this type in the printing industry."

Discusses Printing Industry Automation

In a previously compiled paper entitled *Introduction To Automation*, Richmond Maury, president, The William Byrd Press, Richmond, Va., dealt with the subject in general manner. He referred largely to industry in general. One of the pertinent observations made was: "The more automated a production line becomes, the more rigidly bound it becomes to produce a standardized product. A small change in the product might require the junking of many expensive tools. With respect to the Graphic Arts industry, the speaker referred to a number of approaches to automation published in the February issue of *Printing Equipment Engineer*. He also enumerated a number of potential uses for a new superspeed process called Electrographic Recording which has been revealed by the Burroughs Corporation. Potential applications are: (1) Electronic computer output systems, (2) Labeling or strip printing, (3) Page printing, (4) Teletyping and telemetering, (5) Facsimile duplicating, and (6) Display printing.

Equipment Manuals and Maintenance Covered in R&EC Engineering Study Is a Major Industry Accomplishment

(Digest of report submitted to Research and Engineering Council annual meeting, May 13, 1955, Somerset Hotel, Boston, by Vice Pres. Walter S. Reed of Dexter Folder Co., who is Acting Chairman of the Council's Committee on Maintenance, and Christian E. Burckel, Consultant in the Maintenance Field, Yonkers, N. Y.)

A MAJOR accomplishment of the Research and Engineering Council is the report on *Equipment Maintenance* presented before the May annual meeting in Boston. The report deals with two important matters respecting (1) Standardization of equipment maintenance manuals by manufacturers, and (2) Revision of the present *EQ-2—Preventive Maintenance Manual*. Both of these recommendations are designed to improve performance of plant equipment so that, in turn, management not only will realize greatest productive capacity of the equipment but will also be interested in encouraging foremen and workers to obtain maximum machine productivity with pride in their work.

The report was presented jointly by Messrs. Reed and Burckel, the 64 page report itself having been prepared by Burckel from information secured after many meetings with approx. 50 executives in the Graphic Arts industry over a seven year period of time.

Digest of Report

TWO years ago the R&E Council Maintenance Committee met in Cleveland. We discussed "What do we mean by maintenance?" We delimited the problem and came up with one tiny little segment—equipment maintenance.

Maintenance Defined

We defined the term *maintenance* as the process of maintaining capital investment. You buy a machine—that is capital investment. When you oil, grease, adjust and operate the machine, you are maintaining your capital investment.

When applied to equipment, maintenance is divided into six echelons:

(1) Operation of a piece of equipment is an element of maintenance. If a piece of equipment is to operate at 1800 r.p.m. and somebody runs it at 3000, it does just as much harm as though it were not oiled and greased.

(2) Inspection has to be made by comparison with a standard, and, the standard must be spelled out.

(3) Periodic maintenance includes lubrication, cleaning, tightening, and so forth.

(4) Corrective maintenance can be illustrated by taking off a belt and putting on another belt without disassembling the machine. If you have to disassemble, that is called repair. Repair is that maintenance operation which requires partial disassembly and then reassembly.

(5) Modification or modernization. If you operate a machine that is designed to run at 1800 r.p.m. and you want to make it run 2200 r.p.m. by putting in a more powerful motor or some larger gears, you are modifying it or you are modernizing it.

(6) Overhauling is when you take the equipment apart; perhaps take off the paint; inspect everything, put a micrometer caliper on the parts, and put the machine back together again.

Who Is Interested in Maintenance?

The second element is *Who is Interested in Maintenance?* Three groups are vitally interested, as follows:

(1) The manufacturer. He wants his equipment kept in the pink of condition to maintain his good reputation.

(2) The user wants an economical, profitable operation, and he doesn't care what he spends as long as the expenditure assures him a profitable return.

(3) The craftsman who operates the equipment. He wants a steady job, and the only place he can get a steady job is with a user who makes money.

Four Methods of Instruction

The manufacturer and the user of equipment must implement this craftsman's love of machinery by giving him positive understandable instructions on every echelon of maintenance.

There are four methods: (1) The first method we have of transmitting the idea of the "imagineer" to the manufacturer and then to the operator is to have the designer tell the manufacturer, who tells the operator, who tells the fellow-worker, etc. (2) The second method is to have the craftsman come to the factory and watch the equipment being assembled, or go to the factory school where a skilled craftsman can teach him how to operate and maintain his machine. (3) The third method is to have a serviceman go around like a busy bee pollinating, learning something from one plant and telling another what he has learned. (4) Now we come down to the fourth method—the writing of an instruction book. This method ties all other methods together. The apprentice can be told what to do but he may forget; or an experienced operator that is thoroughly trained may quit, or retire, or may get sick and can't come to work. The effect is the same. There is one thing always available—the instruction book.

Standard Procedure for Preparing Manuals

Instruction books received a lot of attention by the Maintenance Committee. One of the comments brought up was that man-

ufacturers give out instruction books and then people won't read them.

Let's get these books in such shape that a man will want to read them. Believe me, those men in your plants are intelligent. They may lack the education that is necessary to operate certain Graphic Arts equipment—but not the intelligence.

First Recommendation

The Committee on Maintenance makes as its first recommendation that we have a standard procedure for preparing manuals. Let's have a standard method—because the man who is working for you today on a Webendorfer, tomorrow may be working some place else on a similar machine, and when he wants to look up something, he is not going to sit down for a couple of hours and read a textbook. What he wants is a reference encyclopedia.

Organize the information so that operators can find it by a simple reference and cross reference. *Every book put out by every manufacturer should have the same structure* so that when you put all the books together in one row, it is an *Encyclopedia of Maintenance of Graphic Arts Equipment.*

Second Recommendation

The second vital recommendation of the Maintenance Committee is to revise *EQ-2—Preventive Maintenance.* In the light of our analysis, it was found there are six elements of maintenance that apply to all Graphic Arts plants—from the largest down to the one-man shop.

(1) What are you going to maintain? You take an inventory and evaluate the equipment in the plant. Decide which is key equipment (requiring special care) that might shut down a whole department or the entire plant. Calculate the dollar value loss of down-time and maintain accordingly. (2) The second element is *How to Maintain.* This requires study of the instruction manual and the preparation of standard procedures. (3) When to maintain. Again the study of lubrication charts and instruction books and the preparation of a time schedule. (4) Provisioning for repair and overhaul. This requires the stocking of expendable and fast-wearing parts—may be a few extra rollers or belts in one shop, or an entire stand-by machine in another.

(5) Who is to maintain? Experience has shown that maintenance is a fixed responsibility in any plant. Some plants have complete crews of men for each type of maintenance. Others employ one man or *make a contract with an outside firm.* The important thing is to fix the responsibility.

(6) Paper work. The amount of paper work necessary to be done in planned maintenance depends entirely on what you plan to do with the records.

Give the same attention to maintenance that you do to scheduling work through the plant and you will preserve your capital investment—economically.

Technical Association of Graphic Arts Reviews Member Research

By SIDNEY JAMES PAINE

RESULTS of another year's research for the Graphic Arts industry were discussed at the Seventh Annual Conference of the Technical Assoc. of the Graphic Arts. Consensus was that it had been a profitable year in technical advances, many of which would soon find practical application in day-to-day printing.

The meeting this year was held May 9-11 at the Hotel Somerset, Boston. Business matters of the conference included election of Dr. Paul J. Hartsuch, lithographic consultant, Interchemical Corp., Printing Ink Division, as president of TAGA. He succeeds George L. Erikson, executive vice president, Braden Sutphin Ink Co., Cleveland, in that post.

Other elected TAGA officers include: Robert E. Rossell, managing director, Research and Engineering Council of the Graphic Arts Industry, Inc., Washington, D. C., as first vice president; Virgil P. Barta, head, Research Division, Rochester Institute of Technology, Rochester, N. Y., as second vice president; and Philip E. Tobias, technical director, Edward Stern & Co., Philadelphia, as secretary-treasurer.

Retiring Secretary-Treasurer George S. Hammer, quality control manager, Forbes Lithograph Mfg. Co., Chelsea, Mass., and William T. Reid, chairman and editor of the TAGA Newsletter, and supervisor, Battelle Memorial Institute of Columbus, O., were elected directors.

Chicago was chosen as the 1956 meeting city; the Edgewater Beach Hotel as the site. Dates of the 1956 meeting are to be May 7-9; Michael H. Bruno, research manager, Lithographic Technical Foundation, Chicago, is general chairman. His committee includes W. O. Morgan, offset editor, Graphic Arts Monthly, in charge of publicity and mailing; Dr. M. C. Rogers, research director, R. R. Donnelley & Sons Co., in charge of registration; F. M. Preucil, research director, Chicago Rotoprint Co., in charge of equipment and supplies; B. L. Seitz, chief research engineer, Miehle Printing Press & Mfg. Co., in charge of visitations and transportation; Jack W. White, assistant to the research manager, Lithographic Technical Foundation, in charge of hotel, meeting hall and food; J. J. Skahill, sales manager, Roberts & Porter, Inc., in charge of banquet and cocktail party; and W. H. Bureau, technical director, Butler Paper Co., in charge of reporting service.

Printability Defined

The Boston technical meetings presented a fast-paced schedule of 22 subjects for discussion. Among them was the talk entitled, *Toward a Definition of Printability,* by R. M. Schaffert, Battelle Memorial Institute, Columbus, O. Fundamental to progress and improvement in the Graphic Arts, as well as any other pursuit involving many people, is a common agreement on concepts and terms. That's why Schaffert's talk on printability was so timely.

"There seems to be a tendency to look upon printability as something that can be evaluated only by subjective impressions," Schaffert declared. But that is not so.

However, it is necessary to carefully choose our criteria if we are to define printability quantitively, he continued. If the term is "to cover the waterfront," then all the various properties and conditions of paper, ink, printing forms, presses, and perhaps even the pressman, must be included.

Tentative definitions of printability were submitted, but none were presented as being final.

(*Continued on Page 56*)

Newly elected officers at TAGA's Seventh Annual Conference in Boston, May 1955, include (front row, l. to r.) Robert E. Rossell, managing director, Research & Engineering Council of the Graphic Arts Industry, Inc., as TAGA first vice president; Virgil P. Barta, head, Research Division, Rochester Institute of Technology, Rochester, N. Y., as TAGA second vice president; Dr. Paul J. Hartsuch, lithographic consultant, Interchemical Corp., Printing Ink Division, as TAGA president; and Philip E. Tobias, technical director, Edward Stern & Co., as TAGA secretary-treasurer. Also in the group are (back row, l. to r.) George S. Hammer, quality control manager, Forbes Lithograph Mfg. Co., retiring secretary-treasurer as a director; George L. Erikson, executive vice president, Braden Sutphin Ink Co., retiring president as a director; and William T. Reid, chairman and editor of TAGA Newsletter and supervisor, Battelle Memorial Institute, as a director.

PIA Liberalizes Exhibits Policy— Other Important Policies Determined At Mid-year Board of Directors Meeting

THE Board of Directors of Printing Industry of America concluded one of its most successful mid-year meetings. It met at the Broadmoor, Colorado Springs, Colo., May 28-June 1, in conjunction with the Union Employers and Master Printers Sections and several committees. The primary news of the meetings, according to William H. Walling, President of Printing Industry of America and Chairman of the Board of Rogers Kellogg Stillson, Inc., New York, N. Y., was the very strong underlying support which the directors and other members of the official family gave to the general purposes of PIA. This was well illustrated, he said, in the discussion of a dues increase. While there was, of course, considerable discussion on what always is the most controversial matter, there was nonetheless complete support of the importance of adding to PIA's financial resources. The dues increase will not take effect until November 1, which follows the next Board meeting, but as presently scheduled, an 8.7% increase on associations and about the same amount for members-at-large has been approved.

Supplier Relations Strengthened

Among other significant actions, Walling advised that the association took a major step towards strengthening its relations with the entire supply industry. The board approved the establishment of annual associate memberships by national companies supplying the industry. Walling strongly stressed that the significance of the move could hardly be overemphasized because, in the words of the Statement of Policy adopted by the board, the arrangement is "for the purpose of further strengthening the organizational activity in the Graphic Arts industry—and for the purpose of bringing to the printing and lithographing industry the assistance of the companies which supply the industry, and for the further purpose of providing an organized method for consultation between such suppliers and printers and lithographers."

Exhibit Restrictions Liberalized

The statement also makes exhibits possible for conventions following the next one in Atlantic City in October. Contained in the statement are the following excerpts:

> Exhibits of machinery and other supplies will be permitted at the annual conventions of Printing Industry of America in accordance with specifications to be developed in consultation with the national associate members. In general, restrictions on exhibits will preclude the showing of large equipment.
>
> Printing Industry of America recognizes that the cost of exhibits inevitably must be borne by the buyer of equipment and it, therefore, will seek to develop its exhibit program in such a way that it will assist the supplier in connection with his basic sales effort. Further, Printing Industry of America acknowledges the fact that suppliers may be pressed to exhibit, whether or not such exhibit actually performs a necessary sales function, and it therefore states that as a matter of policy it will not in any respect press a supplier to produce an exhibit.
>
> Specifications for exhibits may be changed only after consultation with associate members.

UES and MPS Reports

The board also heard reports showing enhanced activity by the Union Employers and Master Printers Sections, responsible, respectively, for services to unionized and open shop employers. There were also reports from four newly organized sections which are now actively in operation.

Three New Sections

In introducing the reports on the activities of these sections, President Walling pointed out how the facilities of Printing Industry of America were being utilized to meet the requirements of particular groups. These sections are—

Rotary Business Forms Section—President, Joseph Steir, Alfred Allen Watts Co., Belleville, N. J.

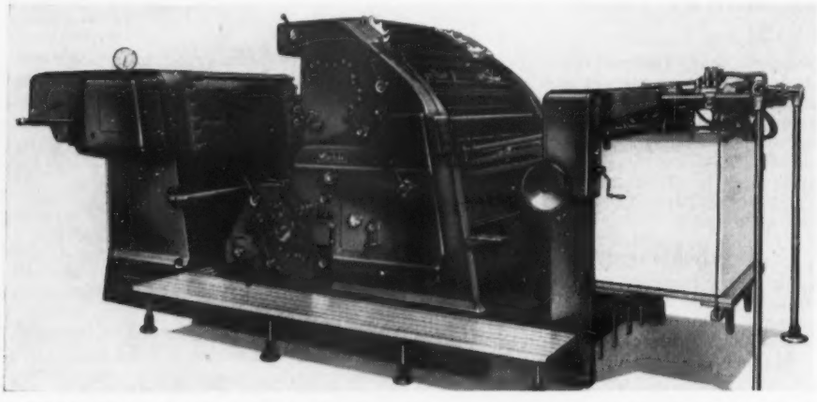
Web Offset Section—President, H. J. Schultz, Schultz Lithographing Co., Chicago.

Trade Binders Section—President, Joseph Kinlein, Optic Bindery, Baltimore, Md.

Ticket Printers Section—President, Fred Belfield, Globe Ticket Co., Philadelphia.

Financial Management Program

In another major decision, the board approved the preparation of a *Handbook on Financial Management*. This is to be initially financed by a grant from the PIA Foundation Trust Fund, a fund which



Miehle 25 in. by 38 in. Offset Presses—Carlton Mellick, vice president of sales, recently announced the addition of two 25 in. by 38 in. presses to its offset line. Designated the Miehle No. 38 Single Color Offset and the No. 38 Two Color Offset, the presses will handle a max. sheet of 25½ in. by 38 in. and bleed a full 25 in. by 38 in. area at speeds up to 7000 i.p.h. The No. 38 Offsets, sponsor states, give the appearance of being small presses by their compactness. All presses are built to Miehle's specifications by Faber & Schleicher, Offenbach am Main, West Germany. The 38 Single Color is available either with a low pile, built-in delivery or with a high pile, extended delivery.

Sheets are separated by air only and are stream fed by forwarding suckers to the feed board and to the front guides. A continuous feeder is available as optional equipment which permits continuous operations without slow-down or stopping when putting a new pile of stock in the feeder. The sheets are positively controlled at all times, states sponsor, by the combined action of stream feeding, pre-register and swing gripper transfer. Large form rollers are of varying size, and dampening and inking rollers are set from outside the press. Steel vibrators are copper plated. The ink fountain is large, states sponsor, and it incorporates the drop away blade for fast wash up. All main bearings are automatically oiled at specific intervals; in addition, many of the moving parts are totally enclosed and running in a bath of oil.

By chain delivery, the sheet is transferred from the chain delivery grippers to mechanical receptor fingers which deposit it on the delivery pile. Suction roll-off wheels hold down the tail end of the sheet and retard its forward movement providing accurate jogging. On both the No. 38 Single Color and the No. 38 Two Color a device to permit continuous delivery without stopping the press is included as standard equipment. It is also announced that the No. 38 includes true rolling cylinders at the printing line, both between plate and blanket and between blanket and paper for printing the image without distortion. Other features claimed are simplified makeready, accurate print length, longer plate life, and elimination of paper stretching forces.

Incorporated in the 38 Offset are power hoist on the feeder, double-sheet caliper, safety bar across the feed board, electro-mechanical sheet detectors, safety bar between plate and blanket cylinders to prevent injury, impression cylinder vacuum air brush, inked roller blowing device, and radial and axial adjustment of second color plate cylinder on the No. 38 Two Color Press.

For further details, please mention PEE No. 517 in your request.

has been established for several years to provide capital for long-term projects. It is expected that it will take two years to produce the manual under the leadership of Col. H. R. Kibler, W. F. Hall Printing Co., Chicago, Chairman of the Committee on Business Controls, and Harold R. Long, Kable Printing Co., Mount Morris, Ill., Chairman of the Financial Management Committee. In producing this book, the primary objectives are to provide information which will assist top management, as well as the financial executives and accountants, in connection with basic financial policy, and also meet the specialized needs of letterpress printers and/or lithographers, and also to the extent feasible, other special groups.

Ash Kahn Crew

The Ash Khan Crew under the presidency of Rollie W. Bradford, Bradford-Robinson Printing Co., Denver, Colo., inducted the following into membership in this honorary organization: James J. Rudisill, Rudisill and Co., Inc., Lancaster, Pa., past President of PIA; George B. Gannett, George D. Barnard Co., St. Louis, Mo., and H. E. Milliken, Omaha Printing Co., Omaha, Neb.

There were many other meetings of importance, including those of the Managers of Local Associations, where many professional matters and also basic PIA policies were considered.

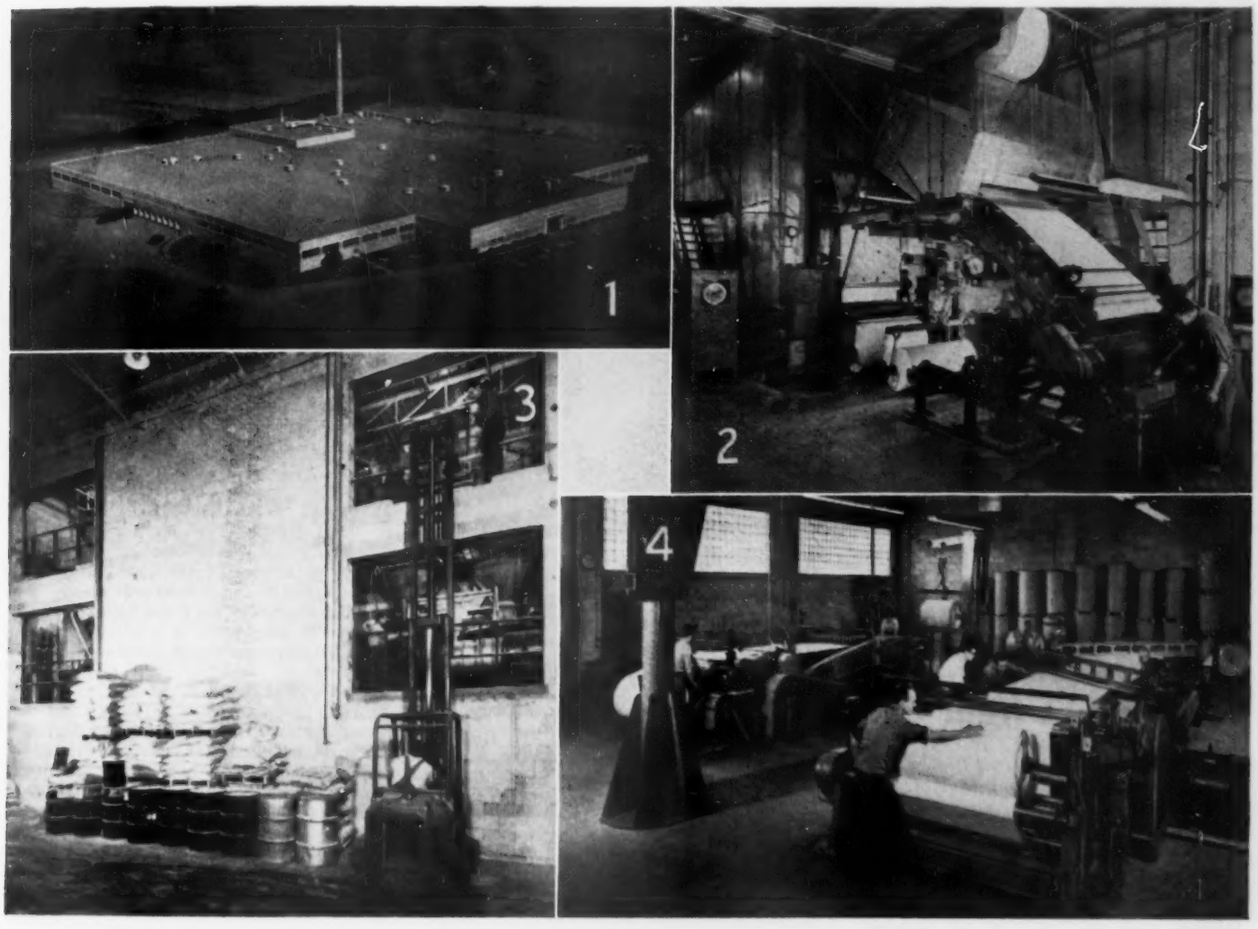
PIA's New Building

John M. Wolff, Past President of PIA, announced that plans for the erection of PIA's new building on Chevy Chase Circle in Washington, D. C., are in an advanced stage and that he was confident of the beginning of actual construction in the not-too-distant future.

Office Consolidated—The Cottrell Co.'s New York sales office was recently consolidated with Harris-Seybold Co.'s New York sales and service office at 380 Second Ave., New York 10, N. Y. Announcement of the move was made jointly by Ren R. P. Perry, vice president of sales for Harris-Seybold and S. C. Saunders, Cottrell's sales vice president. The Cottrell Co. will continue its individual sales and service in the new location.

Designer Retires—E. H. Laabs, general supervisor of engineering at Cutler-Hammer, Inc., recently retired.

Vacation Period Observed—R. Hoe & Co., Inc. will this year observe a plant and office wide vacation period, both being closed from July 25 to August 6, inclusive. While no regular shipments will be made during the above period, arrangements have have been effected to take care of any emergencies that may arise in the trade. No deliveries will be accepted during the vacation period.



Paper Manufacturers Celebrates Golden Anniversary

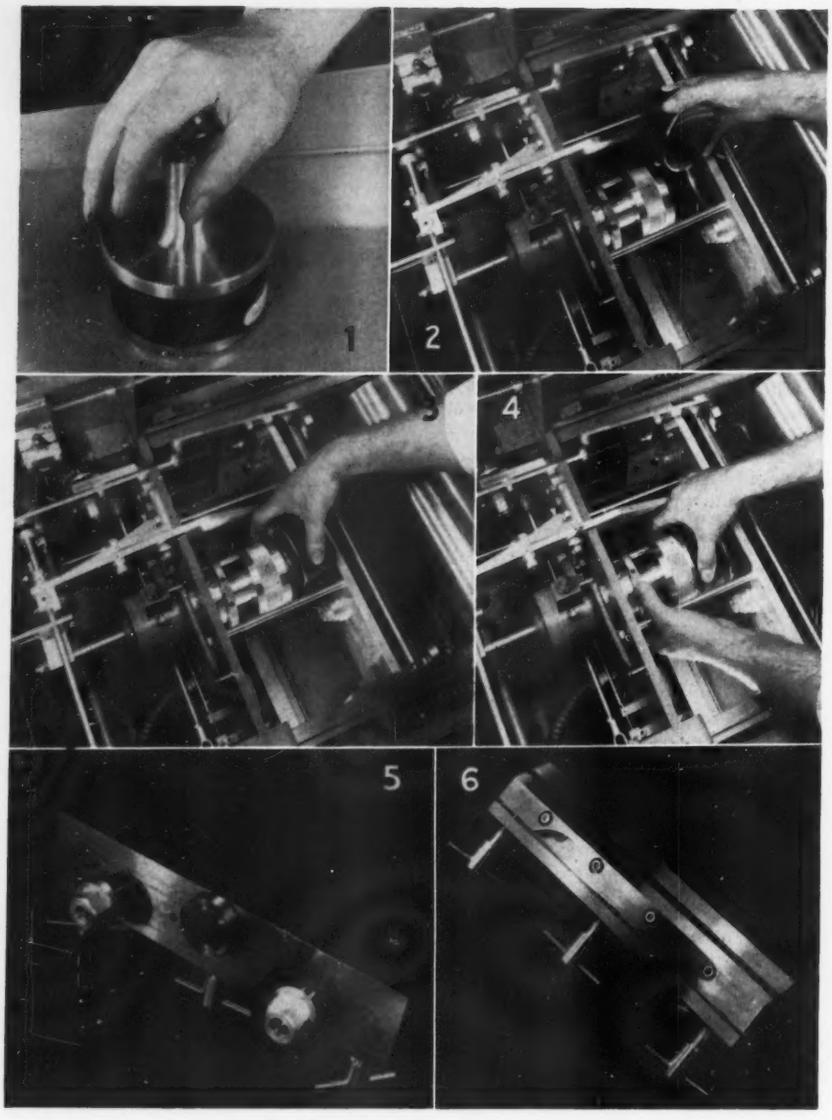
Paper Manufacturers Co., Philadelphia, is celebrating its 50th anniversary in 1955. As one of the largest paper converting firms in the world, it presently occupies two new plants (Philadelphia and Indianapolis) with a combined total of 240,000 sq. ft. of floor space. Paper Manufacturers' products include communication papers, adding machine rolls, mailing and listing papers, small roll specialties, gummed paper specialties, flat gummed paper, heat-sealing paper and strip gummed paper. The 50-year history of the company, along with many photographs of the present manufacturing facilities, are contained in a special issue of the company's house organ, *Perfection Pointers*.

1.—Aerial view of Paper Manufacturers' main plant at Philadelphia. Floor space in this plant amounts to 200,000 sq. ft.

2.—Gumming machine in the Paper Manufacturers' plant. Members of the company's technical staff in the Gumming Division developed, in 1941, a special nonblocking Teletype Tape for use under extremely humid climatic conditions.

3.—Sacks of glue are handled by lift truck.

4.—"Breaking" machines for flat gummed paper.



Vandercook Press Inking Device

1.—A 3/16 in. diam. hole is punched in the lid of the can as received from source of ink supply.

2.—This is a general view of Vandercook Ink Feed installed on a proof press. The operator is inserting the ink can with hole punched in the lid between the cased in spring plunger and the ink spreader.

3.—The ink can is partially inserted between plunger and spreader.

4.—Here the ink can has been fully inserted, but the plunger has not yet been advanced against the spreader opposite the rollers in the inking system.

5.—View of the ink spreader removed from the press. This spreader is visible in Fig. 4.

6.—The ink spreader taken from the delivery side showing the ink adjusting screws. This particular spreader was designed for small proof presses. More keys will be used on production presses.

Vandercook Press Device Takes Ink Direct from Can

A DEVICE for applying ink to the form rollers of proof and of production presses was announced by E. O. Vandercook, president and research director of Vandercook & Sons, Inc., at the May Annual Meeting of the Research and Engineering Council in Boston.

The Vandercook Ink Feed is a device for releasing ink directly from the original can and applying it to the rollers of a press. According to Vandercook, the device has undergone exhaustive laboratory tests and has proved successful on two new Vandercook proof presses to which it has been adapted.

While detailed information is not available, the following data has been released: The Vandercook Ink Feed eliminates the ink fountain and was developed particularly for those machines manufactured by Vandercook that are used for short runs. Ink is fed directly from the ink can. The volume of ink being fed is controlled by a single knob in stepless amounts from 0 to sufficient ink for a solid plate the full printing area of the press. Keys are provided to give control of ink across the form. No ink is wasted. It is not possible to alter the ink. The ink agitation and fountain washup are eliminated.

Before inserting a can of ink into the the ink feed, a 3/16 in. hole is punched in the center of the cover, using a quick acting punching device. The ink spreads from this hole to the width of the press. The amount of ink at any one point is controlled by keys. A screw plunger, driven by a positive indexing clutch, forces the bottom of the can to the cover, and the sides of the can fold over as the plunger advances. A 1/2 in. adjustment of the pointer on the knob controlling the travel of the plunger results in an automatic movement of the bottom of the can toward the top of 0.0001 in. for each impression. All of the ink in the can may be fed into the inking system.

To change the color or type of ink being used, a different ink can and key controlled ink spreader are substituted. The 3/16 in. hole in the cover of the can removed is then sealed with paper. The ink spreader does not require cleaning except when it is desired to use a particular spreader for a different ink.

A somewhat different application of the Vandercook Ink Feed is now being developed at the Vandercook Laboratory. In this equipment, the ink is pumped in metered amounts from a large container to the Vandercook Ink Spreader. For further details, please mention PEE No. 497 in your request.

Largest Installation

Alan Wood Steel Co. announced its largest installation of Algrip, the company's floor plate, in the pressrooms of the new newspaper plant of the Philadelphia *Bulletin*. Nearly 26,000 sq. ft. of Algrip have been installed on all walking surfaces at the pressroom level, including walkways on the presses and along all conveyors; on transfer tables and on the floor of the freight elevator that serves the pressroom. Algrip is an abrasive rolled steel floor plate made by a process developed by Alan Wood Steel. Under the process, abrasive grain, the same type used in grinding wheels, is rolled as an integral part of the upper portion of the steel floor plate. Algrip is effective where ink mist, oil, grease or liquids make walking hazardous.

Opens School

Fred M. Jernt is opening Printing Equipment Engineering School at 5857 Ainslie St., Chicago 30, Ill., for instruction in rebuilding and maintaining typesetting machines. The student will take apart and assemble various units step by step, learning all from face plate to the escapement. Linotype, Intertype and Ludlow units will be on hand for practice. The recent acquisition of a printing plant will provide ample space for class work.

Improved Packaging Printing With Improved Flexography

By HARRY A. NASH*

*General Printing Ink Co., Div. Sun Chemical Corp., Long Island City, N. Y.

II—SOLVENTS

Drying of flexographic ink is governed by the following factors only:

(1) Evaporation rate of solvents in the ink, and (2) Absorption rate of stock being printed. Of the two, the quick evaporation rate of solvents plays a decidedly larger part in the drying process. Absorption of ink is secondary. Therefore, if drying trouble occurs, the pressman must find out whether:

1. There is enough solvent in the ink.
2. The right type of solvent has been used in the ink.
3. The auxiliary drying equipment is effective.

Inks are purposely made heavy with a higher concentration of color and binder than is required for running on presses and with a smaller amount of solvent so that adjustments may be made to suit pressroom conditions which vary from day to day, job to job, plant to plant and even press to press. Consequently, it is up to the pressman to add solvent at the start-up of the run and as the run progresses, in accordance with his best judgment.

The three commonly used solvents are:

1. Ethyl acetate, for very fast drying (quick evaporation)
2. Ethyl alcohol, for normal or medium drying
3. Methyl cellosolve, for slow drying (slow evaporation)

Extreme caution should be exercised when using ethyl acetate as this chemical will swell rubber plates, rollers and hoses. It should never be used in stronger proportions than 20% acetate and 80% alcohol. Alcohol and cellosolve have absolutely no detrimental effect upon rubber.

For the purpose of simplicity, it is recommended that the pressman start thinning with alcohol, the medium-drying solvent. If the ink is not drying quickly enough, he can increase his drying rate by adding first 10% acetate, and then 20% if required. Should the ink be drying too quickly with straight alcohol, he can work down by adding 25%, 50%, or 75% cellosolve to the alcohol. On some jobs, he may end up using 100% cellosolve.

A drawdown, as earlier described, will eliminate a great deal of guesswork. It is recorded proof that the color weakens to a certain point by 10% reduction of ink and to another definite point by 20% reduction. The pressman should hold each drawdown so that the light shines on its surface and note to what extent the glossy surface is dulled by each reduction. If the ink film is too dull for the job, then he knows he must boost the binder a trifle. He should turn the sample over

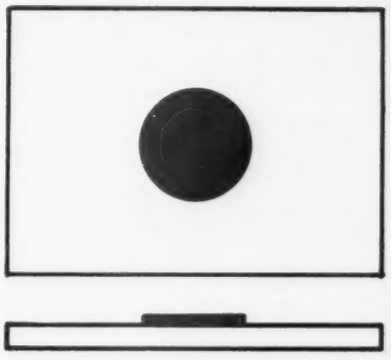


Fig. 1.—Ink staying on surface of hard stock with little or no penetration.

and look at the amount of penetration to the reverse side. If there is very little penetration, the pressman will have to rely principally on solvent evaporation to avoid drying trouble; if the penetration is more than desired, less solvent or faster drying solvents and more heat must be used.

Auxiliary Drying Aids

Next to the use of the correct solvent mixture in the proper proportion, the most effective aid to evaporation drying is the application of heating units and/or forced-air units to the surface of the printed web. At the present time, a great many flexographic presses in commercial use are not equipped with closed fountains, although all presses being built today are so constructed. Should the fountains be of the open type, care must be exercised not to place the heating unit near an open fountain in order to avoid drying the ink on the ink rollers or on the printing plates themselves. If there is no other position for the heater, it is quite possible that cellosolve will have to be added to that exposed fountain only.

Heat near the rewind is also undesirable as it causes the locking of heat in the roll unless the web passes over a chill roller immediately before being wound. Heat in the rewind retards solvent evaporation which may result in offsetting or blocking in the roll. It is necessary to place all heating apparatus so that only the printed web—and not the liquid ink, rollers and plates—is affected.

The well equipped press will also be supplied with auxiliary forced air machines which blow a continuous blast of air onto the printed surface. There are several types in use, but the one that may be placed within a few inches of the moving web has proved to be the best. The air nozzle with the greatest number of small holes per square inch, feeding a great number of fine streams of air onto the web, makes for maximum drying efficiency.

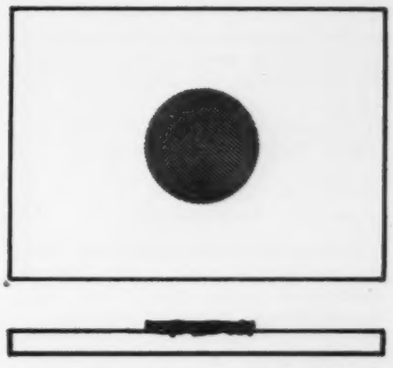


Fig. 2.—Ink partially absorbed by stock becomes gray in tone in the case of black ink on white paper.

Still another aid is the use of a suction unit that will draw off the air that has become saturated with solvent. If the air immediately over the surface of the web could be seen, it would not look unlike the heat waves over the engine hood of your car on a hot, sunny day. It may be readily understood that a fresh print with solvent rising from it has a much better chance of losing its solvent to air that is not already solvent-saturated.

A different aspect of the evaporation of quick-drying solvents concerns the loss of solvent from the ink in the fountains and reservoir as the run progresses. When the solvent percentage has decreased to a point where it is out of balance with the other two basic components, drying problems appear. The pressman must

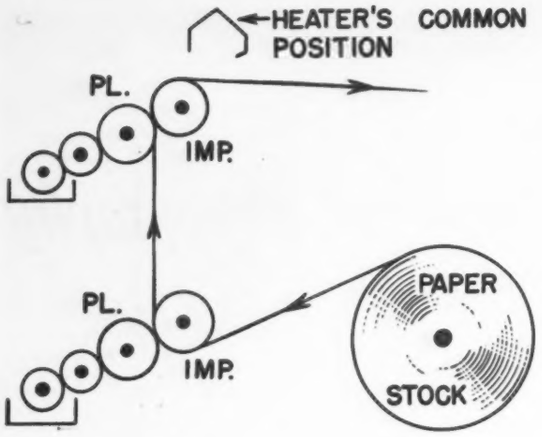


Fig. 3.—Heater as shown in position may dry ink on rollers of second printing unit.

then replace in the fountain or reservoir an amount of solvent equal to that lost by evaporation. This, of course, is theoretically valid, but so far no gauges have been developed to measure evaporated solvent. Consequently, in practice the experienced pressman will anticipate drying troubles when the print color starts to darken, and then estimate the amount of solvent to be added. Solvent is not discriminate. It will evaporate as soon as a kit of ink is opened, and it will keep on evaporating in the fountain, over the ink rollers, on the plates and on the web. It will evaporate whether the press is running or not.

Printing Surfaces

The only other factor other than evaporation governing the drying of flexographic ink is the absorption rate of the stock being printed. A look at some of the more commonly used types of stock will show how they vary in this respect. These may be divided into two main classes: Porous and non-porous.

Porous Stocks

Among the porous papers are: M. F. sulphite, M. G. sulphite, bleached and unbleached krafts, tissue, and paperboard. Held so that light reflects on the surface, a sample of one of these is dull in appearance and easily marred by running the thumb nail across with light pressure. A drop of ink will penetrate further and more quickly into this paper than on hard surfaced sheets, and printed areas on such porous papers will dry more quickly than on surfaces where there is no penetration. Therefore, a slower evaporating solvent and use of less heat or air may be considered, or press speed may be increased.

It follows that the more ink is absorbed into the paper (or the more ink and paper becomes a part of each other), the more the properties of the ink will become affected by the paper insofar as color and ink gloss are concerned. For example, bright red ink, films of which appear bright and glossy on a hard-surfaced opaque glassine, will appear dull and washed out on an opaque sulphite because the white of the sulphite is now influencing the color of the ink. Holding the paper up to light, and looking through the sheet, reveals—depending upon the quality of stock—a bunching of the paper fibres in small clots throughout the sheet. These clots of fibre will absorb ink at a slower rate, and the ink, being unable to penetrate these areas as readily, will remain more on the surface also in clots. The result: a mottled effect of bright glossy red and dull washed-out red in blotches.

A partial remedy is to boost the varnish content of the ink so that the more heavily bodied ink will penetrate more evenly over every square inch. This, however, will help the gloss quality more than it will the color and it is recommended that the ink supplier be called in if the color is still unsatisfactory. While he will be able to swing the color with very simple adjustments, he will not be able to perform a miracle in obtaining the same results that would be expected on a non-porous paper.

Non-porous Stocks

Among stocks with non-porous surfaces are super-calendered sulphites and glassines, aluminum foil, Cellophane, polyethylene and other plastic films.

Super-calendered papers differ from machine glazed and machine finished papers primarily in that their surfaces have been made hard and smooth by a buffing or polishing process on a calendering stack right after manufacture. Just as a printer may run a one, two or three color job on his four color press by bypassing one or more fountains, so may a papermaker feed his web through half or all of his calender rolls. The more rolls, or "nips," that perform this buffing action, the harder and smoother the paper surface. Ink on this type of surface will retain more of its original lustre and color as penetration is negligible. Drying on this surface must rely solely on evaporation.

Aluminum foil does not absorb ink at all, nor does Mylar, Cellophane, Pliofilm, polyethylene or other plastics such as butyrate and acetate. These printing

TROUBLE SHOOTING AIDS

Symptom	Cause	Remedy
1. Buildup of hard ink around type edges; filling in of type	1. Ink drying too fast	1. (a) Make sure heating units are not near fountain (b) Add cellosolve
2. Buildup of ink on idlers; pickoff of first down color by second color; ruboff on rewind	2. Ink drying too slowly	2. (a) Add more alcohol or ethyl acetate (b) Increase auxiliary drying aids (c) Put down a thinner film
3. Ink flakes off stock; ink rubs or smears on inspection bench	3. Ink not adhering	3. Add more binder—too much solvent in ink
4. Ink bleeds through stock; color and gloss dull and spotty	4. Ink penetrating stock too much	4. Add more binder—too much solvent in ink
5. Ink smears when subjected to heat	5. Heat bleed	5. Call ink supplier—wrong ink formulation
6. Small dark and light color spots; print mottled; color weak	6. Too much solvent in ink	6. Add more full-strength ink
7. Heavy ridges on ink rollers; filling in of type	7. Ink too thick	7. Add more solvent
8. Ink froths in fountain and over printing rollers	8. Ink foam	8. Add defoaming agent—advise ink supplier
9. Light shining through pin holes in ink film	9. Ink film too thin	9. Adjust ink rollers
10. Poor opacity	10. Ink film too transparent	10. May be corrected by adjusting for a heavier ink film; ink may have to be reformulated

R. Hoe & Co., Inc., Representatives Attend Meeting—Engineering and sales problems affecting the manufacture and distribution of newspaper printing presses were discussed at a meeting of R. Hoe & Co. executives and representatives at the New York Athletic Club recently. The meeting was presided over jointly by Pres. J. L. Auer and Vice Pres. Walter Cooper.

Guest speakers were R. E. Fisher, director of research and development of Time, Incorporated, and Martin M. Appelman and Thomas R. O'Malley, authorities on marketing and research. Included in the group were sales representatives from Hoe's Boston, Chicago, San Francisco and New York offices. Leading the discussions were various members of Hoe's research and engineering staffs including C. A. Harless, vice president and director of engineering; D. W. Worthington, chief engineer; B. C. Polglase, assistant chief engineer; A. R. Hegeman, manager of research and development, and A. J. Durante, works manager.

surfaces present their own particular problems, the chief one being to determine whether the surface is in a condition to receive ink which will adhere and dry without undue difficulty. In untreated or virgin foil there is a very thin film of oil over its surface which is deposited during manufacture. There are an excessive number of pin holes in some foils which, when backed by other materials, permit seepage of laminating agents to the printed surface. In either instance, these foreign substances will act as a detriment to a satisfactory print unless counter-measures are taken. And most counter-measures will not give printing quality equal to that obtained by the use of a good grade of clean, treated foil.

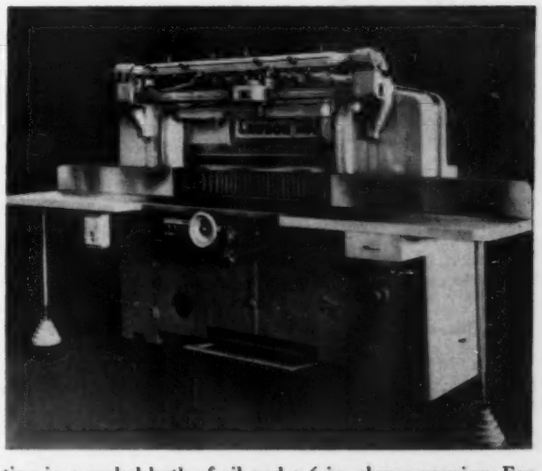
As on foil, the main question with Cellophane, acetate or polyethylene is: "Has the surface an affinity for properly receiving ink so that it will adhere and dry?" Films have been given many different treatments in manufacture to meet various requirements. It is necessary for the ink formulator to know the proper designation of the film to be printed and to have a sample of it.

Cellophane and most films will tend to shrink with the gas flame or electric coils that are necessary to help fuse the ink film to the surface. It is quite the opposite with polyethylene, which stretches from the pull of the web over the idlers. Most poly printers have found that forced air is a far superior drying aid than heaters. This is an understandable conclusion since poly is much more sensitive to heat than other films. Moreover, since the drying rate on non-porous surfaces is also dependent on the amount of ink film deposited, a thin coat naturally will dry more quickly than a heavy layer.

Though each of these films presents peculiar printing problems, the flexographic printing process can solve them, for it has made and is still making its greatest progress as a direct result of the development of films for the packaging industry. And it is unlikely that any new film will be introduced on the market without first being successfully printed on a flexographic press.

(Concluded)

Helping to Move In—Under their modernization and expansion plan, Franklin Printing Co. and Williams & Marcus, both of Philadelphia, Pa., are moving into a new $500 thousand plant in Primos, Pa., a suburb of Philadelphia. John S. Williams has been elected president of the combined companies. As a part of the program, some of their older Millers, manufactured by Miller Printing Machinery Co., are being replaced by a new 21 in. by 28 in. TW Two Color Press, two 27 in. by 41 in. TY Two Color Presses and Two 27 in. by 41 in. SY Single Color Letterpress Presses. Pictured here is John S. Williams, president of Williams & Marcus, helping to move in the first of his new Miller Presses. Also are (left to right) McClain of Franklin; Grau, new building engineer of Construction Co.; McGovern of Williams & Marcus; Mitchell (rear) of Franklin; Williams, president of Williams & Marcus & Franklin; Hicks (rear) of Miller Printing Machinery Co.; Palmer of Franklin; Martin of Williams & Marcus; Given of Franklin; Hess of Franklin; Craig of Franklin, and Buchanon of Williams & Marcus.



Lawson 55 in. Cutters—Four models of 55 in. Hydraulic Clamp Cutters have been added to the V65 Series of paper cutters by E. P. Lawson Co. to meet the growing trend among printers and lithographers toward larger press sizes. The line of 55 in. machines includes the Motor Operated Back Gauge Model and the Lawson Electronic Spacer Model. The Lawson Model 55-T-77, measuring 55 in. between uprights with rear table extended to 77 in., allows sheets to be cut in press sizes up to 52 in. by 76 in. Standard equipment includes cushioned hydraulic clamping, toe hydraulic treadle, 5 in. clamp, straight line knife bar pull, gears operating in a sealed bath of oil and a 6 in. clamp opening. For the first time in the development of hydraulic clamp cutters, says Lawson president, David W. Schulkind, his company's engineers have succeeded in separating the clamping mechanism from the knife operating unit. The "V65 Series" of hydraulic clamp cutters represents the results of eight years of research and engineering, he said. For further information, please mention PEE No. 509 in your request.

Reports of Research Dominate Meeting of Chicago ANPA Mechanical Conference

RESULTS of applied research was the dominating theme of the 27th annual Mechanical Conference of the American Newspaper Assoc. The conference was held at Chicago's Edgewater Beach Hotel, June 6-8.

Not all the developments discussed had yet been field tested and proved for practicability. But all bore promise of reducing plant manufacturing costs.

The 27th ANPA Mechanical Conference was the largest of its kind ever held. More than 1400 persons were there. Record attendance was matched by more equipment and supplies display booths than had ever been assembled at any previous conference.

Overriding features of the conference were the progress reports on phototypesetting (now being done in five newspaper plants across the country) and the r.o.p. color standard report.

Other promising developments reported were tandem router, Tenanon and Mat-Pak, the new Hoe Underside Stereotype Press Plate Lockup, field test results on several mailroom machines, the Acme One-Bite and the WCM Self-Banking machines and etching processes, and user experience of the Dow-ANPA high-speed engraving process.

All who attended came away from the conference with the feeling that such conferences are becoming more and more essential as technical development in the industry accelerates. Behind it all, of course, is the applied research now going on in the printing processes, the primary objective of which is reduction in plant operating costs.

R.o.p. Color Report Gives Standard Plant Procedures

HIGH spot of the ANPA Mechanical Conference session on r.o.p. color, Wednesday, June 8, was the report of the ANPA-AAAA Joint Committee on R.o.p. Color Standards. This report, officially known as *Plant Procedures for Run-of-Paper Color Printing* (Report No. 6), gives recommended standards for handling such printing in all departments of a newspaper from composing to pressroom. Joseph E. McMullen, chairman of the session, gave a brief account of the report.

Research Progress Reported

Then McMullen introduced Roy W. Prince, technical research director, ANPA Research Institute, Easton, Pa.

Prince showed a film taken at the Institute. Among the developments shown were the dry grained aluminum foil plates for direct image offset work. It takes but 15 minutes to go from type to printed page by this process. Among the instruments and tools worked on at the Institute and shown in the film were a core stripper, a bending fixture for magnesium plates, and a form type gage. A dry offset ink which permits up to 25,000 impressions per hour to be made by this process was touched on. Also mentioned were the Mat-Pak Process, the Dow high-speed etching process, and many other projects either started or assisted at the Institute's labs.

Prince pointed out that "one research development almost always leads to others which demand investigation. We, at the Institute, are constantly striving to choose those projects which will best serve the industry."

How To Use Color

O. C. Holland, Interchemical Corp., introduced the strictly color portion of the session. Gist of Holland's "color-full" remarks and entertaining prestidigitations was—don't be afraid to use color. Keeping a few simple rules in mind, dive right in.

Remember first that the eye can be fooled. Varying the background can make the eye believe it's seeing two different shades where there is really only one. Then, judge color in small units. The eye may get fatigued from seeing too much of a color at one time and thereby fail to register a slight change in that color. Finally, the only real way to become familiar with color is to experiment with it. Such considerations as matching color tones, stressing the more advancing colors in a layout, and making printed color appear like the real object can be mastered only through usage. So, to learn how to use color, begin experimenting, said Holland.

Report on R.o.p. Color

The committee which worked on the r.o.p. color standards included James H. Armistead, Nashville (Tenn.) *Tennessean* and *Banner*; Amon G. Carter, jr., Ft. Worth (Tex.) *Star-Telegram*; J. J. Eberle, Miami (Fla.) *News*; Earl J. Gaines, Pittsburgh (Pa.) *Press*; Joseph E. McMullen, Milwaukee (Wis.) *Journal*; Alex Primm, St. Louis (Mo.) *Post-Dispatch*; Herbert T. Stanger, *Christian Science Monitor*, Boston, Mass.; Fred Shafer, Chicago (Ill.) *Tribune*; A. H. Tolley, Philadelphia (Pa.) *Inquirer*; Earl R. Weiskittel, Youngstown (O.) *Vindicator*; and Richard E. Lewis, American Newspaper Publishers Association. Representing the American Association of Advertising Agencies on that committee were: George B. Dearnley, McCann-Erickson, Inc.; Ernest Donohue, Batten, Barton, Durstine & Osborn, Inc.; Eli Gordon, J. Walter Thompson Co.; Erwin A. Miessler, Needham, Louis and Broby, Inc.; and Richard Turnbull, American Association of Advertising Agencies.

The panel which discussed the report at the ANPA Mechanical Conference was composed of Henry Garland, Pittsburgh (Pa.) *Post-Gazette*; McMullen; Shafer; and Stanger.

The report begins with this admonition: "In any successful newspaper plant, r.o.p. color printing should be looked upon as being in certain respects quite different from black-and-white printing. Each individual coming into contact with it should have instilled into him that every detail must be handled with the utmost care. Cutting corners is disastrous. It is essential that teamwork be developed in and between the various mechanical departments handling color. Where interdepartmental frankness has been practiced, the way has been paved for easier successful color operation."

In the composing room procedures, the differences in handling full page and partial page units are described. "From a composing room standpoint," the report says, "full-page color advertisements are far easier to handle than partial pages of color carrying other black-and-white advertisements with text matter. Once the page is locked up in the chase, the base remains undisturbed. This favors better register in the rolling of successive mats." The report goes on to recommend procedures in those cases of partial-page units where the chases must be unlocked.

In the stereotype room procedures, the topics discussed included plate and mat inspection, mounting and registering color plates or shell casts, what to do in the absence of register marks, the subject of hot moulding versus cold moulding, scorching, mat packing and make-ready on mats. In the latter case, "it can be argued that mat make-ready is not necessary when the process plates are a proper rendition of copy," says the report. "As true as this may be in an ideal situation, it must be borne in mind that r.o.p. color is printed on soft-packed newspaper presses. This calls for certain corrective measures. The stereotyper may therefore well consider how he can assist by applying makeready to the mat."

The section on casting methods begins: "Trim mats for the casting box with extreme care. Too much emphasis cannot be placed on this operation." The section takes up Pony Autoplates or hand casting box, Junior and Automatic casting boxes, routing, and nickel plating. In regard to the latter, the report says: "Nickel plating creates a hard, long wearing surface which enables the pressroom to apply sufficient impression for smooth solids without damaging those pinpoint highlight dots. In

R.O.P. COLOR REPORT

ALL who wish to make use of the ANPA-AAAA Joint Committee's report, *Plant Procedures for Run-of-Paper Color Printing*, can obtain copies by writing to either of these sources: American Newspaper Publishers Association, 370 Lexington Ave., New York 17, N. Y., or American Association of Advertising Agencies, 420 Lexington Ave., New York 17, N. Y.

r.o.p. printing this is important. The highlight dot is considerably smaller in size than that in normal black and white, thus more likely to wear and damage. In the absence of a nickel plating set-up in the newspaper plant, the work can be done by an outside concern. A nickel deposit of about .0002 in. is sufficient."

The pressroom section of the r.o.p. color standards report begins with a list of the initial requirements of mechanical equipment and points to watch in planning the run. Then steps in preparing the press, plating the press, registration, ink adjustment and press adjustments are considered.

A final word is suggested in the report: "After the run has been completed, it may be advisable to measure the compensator settings and write these measurements on the original lead diagrams used in planning the run. At this time it would be advisable to attach notes to this diagram concerning the problems experienced and their corrections, etc. This diagram should then be filed, to be reused if the same run is to be made at some future date, when previous experience can be used as a guide."

Advertising Agency Questions

As a final feature of the r.o.p. color session, Eldon Rohrson, Tatham Laird Agency, Chicago, brought the advertising agencies' point of view to the conference, not only regarding color but newspaper advertisements generally. Rohrson said there were three common goals of both the newspapers and the agencies. These are: Standardization of sizes and materials to be furnished in newspapers ads; adherence by the newspapers to standards already adopted; and the bringing of more craftsmanship to newspaper production. "By far the most important at this point is the first consideration—standardization of requirements and page sizes," he said.

Then, Rohrson, as a representative of advertising agencies generally, asked the conference several questions.

Among the more important, Rohrson wanted to know whether, in case of repeats of color ads, it was necessary to furnish new materials. Replies varied.

Charles G. Bowen, stereotype superintendent, Philadelphia (Pa.) *Inquirer*, said his paper gets lots of repeats and that there is always a possibility of losing a mat. The agency should keep the originals, he said, so that duplicates could be furnished if they were necessary.

Andrew R. Mervick, production manager, Pittsburgh (Pa.) *Sun Telegram*, said his newspaper's policy was to request notification with the original insertion if there were to be repeats or the possibility of repeats.

Vern Spitaleri, research director, Miami (Fla.) *Herald*, said his paper keeps mats 90 to 120 days. But, he said, the newspaper couldn't recommend the work which could be obtained by rerunning an ad from the stored mats.

The Chicago *Tribune* requires new mats in cases of reruns.

George Marshall, production manager, Portland (Me.) *Press-Herald* and *Express-Telegram*, said his paper could offer reruns up to one year after the original insertion.

The concensus was that the advertising agency should be informed of the requirements on repeats by the newspaper since such requirements could not be standardized for the country as a whole and for all sizes of newspapers as a whole. Further, it was suggested that research be made at some date in the future as to how long a mat may be saved without losing its dimensional accuracy.

Rohrson asked what materials should be furnished if there is a change in copy in a color ad. McMullen suggested the answer to the question could be found in the proposed standards for color newspaper ads.

Named Laboratory Director

A. S. Taylor was named laboratory director of ANPA Research Institute according to an announcement by the Research Institute board of directors. Taylor became acting laboratory director, Dec. 1, 1954, succeeding Roy W. Prince, now technical research director, Easton (Pa.) Laboratory.

A general discussion then ensued based on Rohrson's question as to what the advertising agencies could do to ensure proper reproduction of their colors in color ads. It was suggested that as long as there are now standard colors that the agencies should make every effort to translate their color requirements into these standard colors. It was asked whether a new standard color could be added to those already approved. This was answered in the affirmative.

Tribune Executives Disagree

At this point, Fred Shafer and John Park, production manager, Chicago (Ill.) *Tribune*, told the conference that the *Tribune* will continue to use its present colors instead of ANPA-AAAA standard colors. The paper will continue to use four colors, too. Basic differences of opinion between the *Tribune* and the color committee were not new, Park said. The *Tribune* had advised the committee repeatedly that it believes it should continue four-color work with which it has had such good results instead of switching to three-color work favored by the weight of opinion on the committee. The *Tribune* also believes that the colors with which it has had such good experience should be continued in use rather than changing to the new standard colors.

None of these arguments are new, Park reiterated. But it was necessary to go on record again at that time. However, Park added, the *Tribune* may have to change its color policy at some time in the future despite its satisfactory results with present arrangements. "If we have to change then," he said, "we will. Until then, we're going to continue the system which has given our advertisers and ourselves satisfactory results."

Leon A. Link, *Cleveland Plain Dealer* and *News*, suggested that comic page colors might be used for advertising colors. McMullen replied that comic page colors already had been standardized and had been considered by the ANPA-AAAA color committee. The comic colors were found unsatisfactory for advertising work, however.

Vern Spitaleri, Miami (Fla.) *Herald*, said that, while there may be a paper here and there which would disagree with the recommendations of the color committee, it behooved all papers to try to get along with the standard colors. "All standards entail some compromises," he declared. "And what's the use of having standard colors if they're not used throughout the industry?"

At this point, Rohrson asked what assurance the agencies had that all newspapers would use the standard colors. The reply was that one of the best assurances that newspapers would use standard colors would be that the agencies themselves specify such colors at all times. If the agencies call for standard colors, the papers will certainly supply them.

"Set Up Special Development Account" For Experimental Equipment Tryout To Encourage Executives Make It Work

AT THE Composing Room Session of the ANPA Mechanical Conference, Edgewater Beach Hotel, Chicago, Tuesday morning, June 7, the first section of the session was devoted entirely to phototypesetting techniques for which five newspapers in various parts of the country have been doing some pioneering work, particularly with respect to advertising composition, and one publication being produced entirely by phototypesetting, together with ANPA-Dow Fast Etch Magnesium Printing Plate Process.

At the moment, it is evident that phototypesetting costs more to produce than hot metal composition. But those employing the phototypesetting process feel that eventually it can be done at less cost.

One of the highlights of the Composing Room Session, if not of the entire conference, was the suggestion by Publisher Franklin D. Schurz, of the South Bend (Ind.) *Tribune*, who suggested during an address on phototypesetting that newspaper management set up within its own organization a research development account in the newspapers operation. A further summary of Schurz's address appears below.

Co-Chairmen of the meeting had previously been announced as J. Harold Mintun, Production Mgr., Pittsburgh (Pa.) *Press* and Allan M. Woods, production manager, Long Island (N.Y.) *Newsday*. Chairman Mintun announced Woods could not be present because of illness. Harry Sloane, production manager, New York (N.Y.) *Mirror* served as Co-chairman in Woods' absence.

A panel consisting of management and mechanical executives who are well known throughout the country were seated on the platform as follows: Joseph Goll, mechanical superintendent, Milwaukee (Wis.) *Journal*; Richard Singer, director of printing, Perry Printing Process, Ocala (Fla.); George Kunz, production manager, South Bend (Ind.) *Tribune*; Donald Shortell, mechanical superintendent, St. Petersburg (Fla.) *Times*; C. M. (Larry) Flint, Chas. T. Main, Inc. (former ANPA Research Director), and W. W. Garth, jr., president of Photon, Incorporated.

The first speaker discussed the *Brightype Process*. He was George L. Morrison of Ludlow Typograph Co. (The summary of Morrison's address will be found on an accompanying page of this issue of *Printing Equipment Engineer*.)

The next item on the program was the showing of a film entitled *Selectro-Matic*

Quadders. The film was shown by Emil Bendow, Linotype Parts Co.

Photocomposition in Production

Franklin D. Schurz, publisher of the South Bend (Ind.) *Tribune*, and president of the ANPA Research Institute, in whose plant considerable experimental research work has been conducted, then addressed the executives. Schurz delivered a very constructive address, mostly directed at newspaper management, who in the past has been reluctant to undertake the responsibility of trying out new equipment developments with the objective of eventually reducing newspaper production costs. It was apparent that unless management could initiate and a mutual understanding was developed between management and mechanical executives, that the latter would hesitate to participate in development of new techniques because of the question of increased costs during the interim.

Schurz said: "If photocomposition is to be widely used for setting ads, and this is one of the most promising fields for this new process, the cost of setting the ad plus the cost of making the magnesium plates must be less than the cost of getting the completed ad to the newspaper page type form by the hot metal process.

"At the present time in the case of most ads, the photocomposition method is not cheaper. But this is because the method is so new that the economies of production have been only partially realized. For example, last month, by using the formulas developed in the ANPA Research Institute Laboratory, our engraving department found it possible to etch a magnesium plate consistently to a depth of 0.040 in. or better, without powdering or routing.

"While we have only preliminary cost figures on our May operations with respect to photocomposition, they clearly indicate that the square inch cost of producing the magnesium plates will be lower than it was in April."

Schurz stated that operations in the darkroom and proofing techniques need to be improved in order that costs in time and materials may be lowered appreciably. Research will simplify the operation, bringing about additional economy, and lower costs will result by reason of printers becoming better acquainted with the process.

The highlight of Schurz's address came when he said: "Improvement in the photocomposition process will be speeded up if more newspapers join those who are pioneering in this field. Unfortunately, in the past, installation of new techniques has been slowed up because production managers and mechanical foremen have been afraid they could not show a savings immediately on the new process. Their hesitation to take a chance is quite understandable, because usually business managers are insisting that costs be held down. Yet frequently a new method may be more costly until the employees learn how to operate it and improvements are made in the equipment."

The speaker's next suggestion with respect to the problem of costs was that a research development account in the newspaper's operation could be set up separately. Schurz said: "All new machinery which is still in the experimental stage as well as the cost of operating it, can be charged against the account. When the machine has been proved to be practical and shows it will reduce costs, it can then be charged to the department in which it is being operated. If this plan is adopted, the heads of mechanical departments will be more willing to try out new techniques and we shall make faster progress in reducing newspaper costs."

Phototypesetting in Actual Newspaper Production

After Schurz's address, slides and motion picture films were used to show actual production operations in five newspaper plants. Four of the plants—Milwaukee (Wis.) *Journal*; Perry Printing Process, Ocala (Fla.); South Bend (Ind.) *Tribune* and St. Petersburg (Fla.) *Times* are using Intertype's Fotosetter in conjunction with the ANPA-Dow Fast Etch Process on magnesium plates. The Perry Printing Process, Ocala, Fla. is printing direct from magnesium plates on a specially designed rotary printing press to produce the *All Florida*

(*Continued on Page 38*)

Among Those Attending the ANPA Conference in Chicago

(All names read from left to right)

1.—Erwin J. Smith, and Mechanical Supt. Ralph Moffett, Dallas (Tex.) *Times-Herald;* Deo A. Padgett, Composing Supt., and I. J. Chalifoux, Head Machinist, Cleveland *Plain Dealer*.

2.—Tim Ryan, Interchemical Corporation; Joseph Cory, Head Machinist, St. Paul (Minn.) *Pioneer Press and Dispatch;* C. N. Bertram, Press Supt., Northwest Publications, Inc., St. Paul, Minn.; Stanley Kazlaw, Interchemical Corporation.

3.—Arnold Imshaug, President, Alico, Inc., Montague, Mass.; George Kunz, Production Mgr.; Royal Rager, Stereotype Supt.; Alex Posich, Composing Supt., and George Bolton, Head Machinist, South Bend (Ind.) *Tribune*.

4.—Ed Koffke, Mailroom Supt.; Henry Arbogast, Engraving Supt.; Glen Hutchinson, Production Mgr., Los Angeles *Times-Mirror* and *News*.

5.—Edgar B. Flint, Howard Flint Ink Co.; A. A. McNab, Howard Flint Ink Co., Glen R. Hutchinson, Production Mgr., Los Angeles *Times-Mirror* and *News*.

6.—Ted Serrill, Manager, Pennsylvania Newspaper Pub. Assoc., Harrisburg, Pa.; Herbert E. Cox, Production Mgr., Allentown (Pa.) *Call-Chronicle;* Walter Johnson, jr., Labor Relations, Southern Newspaper Pub. Assoc., Chattanooga, Tenn.

7.—Herbert T. Stanger, Production Mgr., *Christian Science Monitor*, Boston; Jerry Bolman, Mechanical Supt., San Jose (Calif.) *Mercury-News;* Milton Torell, Production Mgr., Los Angeles *Examiner*.

8.—B. G. Burke, Production Mgr., San Diego (Calif.) *Union-Tribune;* Alex MacLennan, Field Engineer, Beveridge Paper Co.; S. S. Mason, President, Skidmore & Mason, Inc., New York, N. Y.; Mark Mossing, Stereotype Foreman, Seattle (Wash.) *Times*.

9.—Otto Wolfe, Production Dept., Chicago *Tribune;* the Misses New England; Scotty Campbell, Western Mgr., and Gardener DeMallie, Pres.-Treas., both of New England Newspaper Supply Co.

10.—Fred Humphrey, Mechanical Supt., Philadelphia *News;* A. T. Mann, jr., Executive Vice Pres., Intertype Corporation; Joseph W. Goll, Mechanical Supt., Milwaukee *Journal;* Orville D. Roderick, Personnel, Lindsay-Schaub Newspapers, Decatur, Illinois.

11.—E. H. Telford, DeKalb (Ill.) *Chronicle;* Roy Prince, Technical Research Director, ANPA Research Institute, Easton, Pa.; Howard Colton, Stereo-Press Foreman, Bloomington (Ill.) *Daily Pantagraph*.

12.—C. Frank Mann, Composing Supt., Louisville (Ky.) *Courier-Journal* and *Times;* Charles R. McGuire, Mechanical Supt., Minneapolis (Minn.) *Star* and *Tribune;* Howard Jampol, President, The Jampol Co., Inc.

13.—Ben Faden, Press Foreman; Don Shortell, Mechanical Supt., and Chas. L. Robinson, Research Director, St. Petersburg (Fla.) *Times*.

14.—Leonard Sjostedt and George Lawson, Stereo Dept., Lake Shore Electrotyping Co.; John Charlton, Photoengraving Supt., and William Wilson, Mechanical Supt., Pittsburgh (Pa.) *Press*.

15.—Gus Amenti and Frank Suma, Edes Mfg. Co.; Jack Faris, Chicago Mgr., Matrix Contrast Corp.; John Payne, Macfarlane, Payne & Co., Ltd., Montreal, Can.

16.—Jack Innes, Stereotype Supt., Indianapolis (Ind.) Newspapers, Inc.; Clay Wellman, Sales Mgr., Ludlow Typograph Co.; H. J. Myers, Composing Supt., Denver (Colo.) *Post;* Fred Brickner, Asst. Mgr., ANPA Mechanical Dept., New York, N. Y.

17.—Glenn Cummins, Mechanical Supt., Wichita (Kas.) *Eagle;* Roy Schulz, Press Supt., Milwaukee (Wis.) *Journal;* Ed Niles, Niles & Nelson, Inc.; Al Tennyson, Composing Supt., Los Angeles *Times-Mirror* and *News;* Ed J. Moldenhauer, Dispatch Mgr., Milwaukee *Journal*.

18.—E. J. Kozlowski, Chief Inspector; George E. Nelson, Philadelphia District Mgr.; Harry Jex, Mid-West Representative, all of Lanston Monotype Corp.

19.—Edward W. Evers, Mechanical Supt. and Wm. H. Evers, Photoengraving Supt., St. Louis (Mo.) *Globe-Democrat*.

20.—Sol Cantor, President, The Composing Room, New York; Robert A. Travis, President, Color Production Service, Inc.; Gordon Elrod, Production Mgr., Newspaper Production Co., Shreveport, La.

21.—Leslie F. Crebassa, Press Supt., and Ferd Mier, Stereotype Supt., Detroit *Free Press;* Edgar Mills, President, Eastern Newspaper Supply, Inc.; C. M. (Larry) Flint, Chas. T. Main, Inc., Boston; Otto Sandvik, Vandercook & Sons, Inc.

22.—Allan Sanford, Sales Representative, Link Paper Co.

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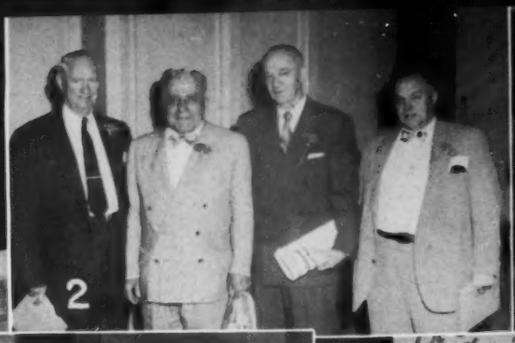
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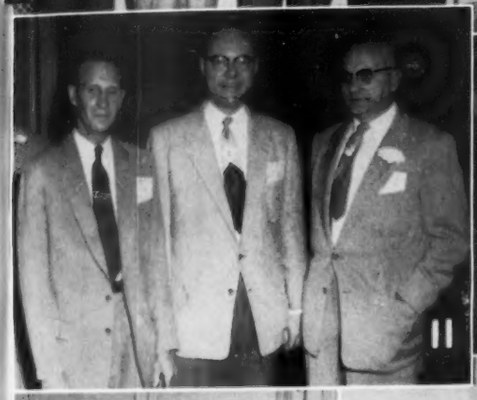
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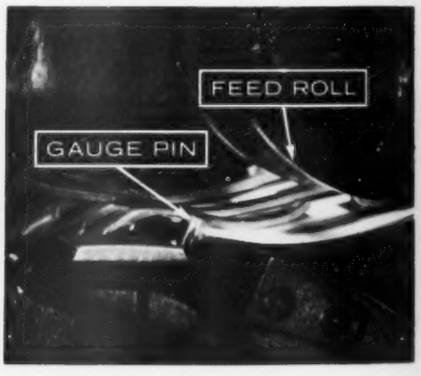
Harris four-color offset press with ultra-precise feed-roll register

Harris feed rolls overfeed the sheet against gauge pins on the feed-in cylinder. To control register on the tail of the sheet, the pressman sets these gauge pins in an almost imperceptible concave arc. Feed rolls force the sheet's leading edge to conform to this arc, thus putting the tail under tension and compelling it to assume a controlled amount of fanning when sheet passes between cylinders. Since the gauge pins are readily adjustable, the pressman can set them to meet his exact requirements.



Overfeeding action of Harris feed rolls is shown in stroboscopic photos taken at 1/10,000 of a second. First photo shows leading edge of sheet touching the gauge pins, which have been graduated by the pressman to form a very slight concave arc.

The difference between profit and loss

can be only 1/240 of an inch

You make money in the printing business by a whisker. If you're off register by a fat whisker—say a full dot—most customers will call it a lousy job. And they won't be back for more.

Harris licked this problem long ago with feed rolls. They're the most precise system of register ever developed for sheet-fed presses. And they're a big reason why most of the money-making lithographers use Harrises.

How come Harris feed rolls are so good?

For one thing, they make hair-splitting front register a cinch—on sheet after sheet, all through the run. They do this by *overfeeding* the sheet to the cylinder gauge pins. That puts the sheet's gripper edge in positive contact with each and every gauge pin.

But that's just part of the story. The real pay-off with Harris feed rolls comes from the way they help control register on the *tail* of the sheet. Paper stretches and shrinks. Cylinder pressure "irons" the sheet so that the tail fans out wider than the gripper edge. This makes it tough to hold register on the tail, especially on large sheets.

Harris feed-roll register puts the fanning action under control of the pressman, and makes it a relatively simple matter for him to hold register on the tail of the sheet. Normally, this means that control of register over the entire sheet is in the pressman's hands every time a sheet goes through the press—whether it's put back on for additional colors, or for precise backup. What's more, Harris feed-roll register is so accurate that two Harris presses of the same size will register with each other.

When you figure that in 120-line work the average dot is only 1/240 of an inch across, you see how close the "profit margin" really is. That's why all large Harrises are equipped with feed rolls. They not only register to a whisker, they can split it right down the middle. That kind of register means more salable sheets in the delivery, more printing profits for you.

Ask your Harris-Seybold representative for the full story, or write Harris-Seybold Company, 4510 East 71st Street, Cleveland 5, Ohio.

HARRIS-SEYBOLD COMPANY

fine graphic arts equipment . . . for everybody's profit

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Feed rolls force leading edge of sheet to conform to the arc of the gauge pins. Visible downward "buckle" is result of pressure which forces sheet's leading edge into this arc. Grippers are about to close on leading edge.

Sheet is now carried by the feed-in cylinder. Pressure of feed rolls has been released, and grippers now maintain arc in the leading edge. This arc governs fanning action, thus giving the pressman control of register on the tail of the sheet.

Harris builds a full line of offset presses

—all except the smallest sizes, which don't require them, have FEED ROLLS.

	Press Size	No. of Color Units 1	2	4	
3-POINT REGISTER	14½ x 20½"	■			
	17½ x 22½"	■			
	23 x 30" A	■			
HARRIS FEED-ROLL REGISTER	23 x 30" B	■			
	23 x 36"*	■	■		
	31 x 43"		■		
	36 x 48"	■	■		
	43 x 59"	■	■	■	■
	51 x 73"	■	■	■	■
	52½ x 77"	■	■	■	■

* Also available with 3-point register

Magazine which is circulated in excess of 300,000 copies.

Garth Explains Photon's Workings

W. W. Garth, jr., president both of Photon, Incorporated and Graphic Arts Research Foundation which developed the Higgonet-Moyroud phototypesetting machines, gave a detailed explanation as to how the Photon equipment operates. The description was excellent. Garth explained the flexibility of the machine by the operator manipulating certain keys adjacent to the standard keyboard of an electric typewriter. A layout or blueprint chart which is affixed to the keyboard permits the operator to set the composition as indicated with respect to type size, spacing between lines, line width and so on.

G. Prescott Low, publisher of the Quincy (Mass.) *Patriot-Ledger*, discussed the use of two Photon machines for film composition in connection with ANPA-Dow Magnesium Process plates. Low asserted: "I think the newspaper industry is on the eve of a great revolution. We have gone far enough with the film process to feel certain that it will cut costs, increase speed, and do a better job. Personally, I think Photon is the answer."

Following Low, Clarence M. Snyder, general manager of the Quincy (Mass.) *Patriot-Ledger*, explained in detail some of the operations in connection with that firm's pioneering work in phototypesetting for newspaper reproduction. Originally, he stated, the classified section of the paper was first started to see what could be done with phototypesetting. The next attack was on the editorial page which requires from 2½ hr. to 3 hr. composition time. As of now, composition and stripping time require 5 man hours. Snyder stated that etching depth extends from 0.035 in. to 0.040 in. This is accomplished with one bath, one operation, with no routing whatever. He explained that the straight matter and body type for advertisements is set on the Photon. Large display type is reproduced by means of the Filmotype or the Typro machine. A Photo Rapid machine is used to prepare copy for pasteups of advertisements.

The matter of corrections is no problem. Snyder suggested that it is better to reset two or three lines when making a correction in one line since this facilitates stripping in the corrected matter. At the moment he feels economies can be effected in production, for instance, the time required for producing proofs can be reduced from 20 min. to 7 min. Snyder declared that there are no problems ahead but which can be surmounted. In the *Patriot-Ledger* plant the magnesium plates are passed in flat form to the stereotype department where Tubular stereo plates are cast for the press in the usual manner.

Questions and Answers About Phototypesetting

During the question and answer period following the various speakers' addresses, a number of interesting questions were asked and answered by panel members on the platform.

One question from the floor was as follows: "How do you handle the problem of extensive alterations in advertising composition?" Snyder replied that the *Patriot-Ledger* does not have that problem.

Someone wanted to know how the changing of cuts in the form was handled. The reply was that "Any printer can change a cut just as well and just as fast as anyone else."

An executive from the floor asked the following hypothetical question: "Would you say the phototypesetting method against hot metal typesetting method saves money?" The answer was, "At the moment, the phototypesetting method would not save any money over the hot metal method, but we wouldn't be fooling with it if we didn't think it would in the future."

In response to another question from the floor, Schurz spoke about cost reduction in his plant each month for several months. "At first," he said, "with any new experimental equipment, the cost of operation is higher—but you have got to take a chance."

In answer to another question, Richard Singer stated that in the Perry Process Plant all type is set exclusively by photomechanical means and under no circumstances would his firm go back to hot type.

Newsprint and Press Lockups Featured at ANPA

MANUFACTURE and handling of newsprint from pulp to the press were part of the pressroom session of the ANPA Mechanical Conference on Tuesday morning, June 7. Also discussed were the Hoe Underside Stereo Plate Lockup and the K.I.D. Blanket Lock user experience was reported. The session was under the co-chairmanship of Earl R. Weiskittel, Youngstown (O.) *Vindicator* and Henry Garland, Pittsburgh (Pa.) *Post-Gazette*.

Stephen W. Clark, New York (N.Y.) *News*, traced the manufacture of newsprint from the carborundum grinding stone, to the paper making machine to the drier section of the paper making machine, through the calender, the winding machine and wrapping.

One important finishing procedure for newsprint, he said, is a good tight wind on the rolls. That's "necessary to prevent formation of air pockets under the wrapper which often rupture under pressure." Clark continued, "Some mills that ship by water have found it desirable to insert a sheet of waterproof paper in each roll. Some use a tar-laminated sheet which, unfortunately, prevents resale of the wrapper as waste. New materials are being developed, however, which should not affect the resale of the wrapper."

Hoe Underside Plate Lockup

Charles A. Harless, vice president-engineering, R. Hoe & Co., Inc., explained the operation of the new Hoe Underside Lockup through the use of a series of film slides. "A semi-rotatable cam shaft is located longitudinally near the side and bottom of each groove holding the blocks and serves four blocks," Harless began. "The end of this cam shaft, in each of four locations on the complete cylinder, extends beyond the cylinder body and is moved from locked to unlocked position by a heavy lever. The cam shaft lever is connected by a link to the operating lever. The operating lever is provided with a socket to receive the lockup wrench and has suitable detents, latches and the like to make it as foolproof as possible.

"When plating the press cylinders, the operator stands in the same position and operates the lockup mechanism in the same manner and with the same wrench as is used on the Hoe compression plate lockup."

Harless pointed out "that changing from one web width to another is readily accomplished by loosening the locking screws of the blocks and sliding them to the new position. When they are locked in the new position they are again ready for operation. No change is required in the actual mechanisms themselves. Sidelay locating stops would have to be repositioned accordingly."

K.I.D. Blanket Lock

Harry Davidson, production manager, San Francisco (Calif.) *Call-Bulletin*, spoke on his newspaper's experience with the K.I.D. Blanket Lock. He began by saying: "We . . . happen to be in a very competitive city where we have a heavy edition schedule and, as a result, look for every conceivable economy for time and money.

"The K.I.D. Blanket Lock is a simple piece of equipment. The lock is a steel rod, 33¾ in. or 35¾ in. wide, with a series of hooks. This rod is sewed onto a canvas tail 7 in. long or longer if necessary. On new press equipment, this tail can be installed into the reel.

"We have two six-unit Hoe presses and one Goss five-decker and have merely pinned the canvas of the lock to the canvas in the reel, and they have been on over three years," Davidson said.

"The advantage of the lock is that you can use any blanket or top sheet without the cost of additional tails or attachments. The locks are adaptable to Hoe, Goss, Wood, Scott, Duplex, or any press with two reels in the blanket cylinder," Davidson concluded.

Crabtree Color Press

An additional feature of the pressroom session was a description of the Crabtree & Sons, Ltd., newspaper press recently installed at the Windsor (Ont.) *Daily Star*. This talk was given by L. J. Rothwell, Crabtree representative at Toronto.

"The machine consists of eight perfecting units," said Rothwell, "with three inbuilt color half-decks, reversing mechanisms for unit to unit color printing, three arm reel stands, and a double former, double delivery folder with superimposed balloon formers . . . the second unit behind the folder is equipped with the two inbuilt color cylinders and there are special leads for taking a web from either of the adjacent units through the four color unit.

ANPA Research Institute Elects Officers

Officers of ANPA Research Institute, Inc. elected for one year terms at a meeting of the board of directors, May 27, are Richard W. Slocum, Philadelphia (Pa.) *Bulletin*, chairman of the board; Franklin D. Schurz, South Bend (Ind.) *Tribune*, president; H. H. Cahill, Seattle (Wash.) *Times*, vice president; J. L. Stackhouse, Easton (Pa.) *Express*, secretary, and Mark Ferree, Scripps-Howard Newspapers, New York, N. Y., treasurer.

The new members of the Research Board are Ferree; Gene Robb, Albany (N.Y.) *Times Union*; Louis A. Weil, jr., Grand Rapids (Mich.) *Herald*, and Robert M. White, II, Mexico (Mo.) *Ledger*.

"For color printing we (Crabtree) have modified the well known automatic ink pump and developed the one-page wide interchangeable portable pump . . .

"Feature of this press," said Rothwell, "is the hard press packing which comprises a single blanket 0.110 in. thick . . .

"The press is driven by eight 45 hp, d.c. British Thomson Houston motors," he continued, "operated through an electronic control built by the Canadian General Electric Co. . . The driving motors are mounted above the units, within the press frames and drive through bevel gears to the main horizontal drive shaft at the rear of the press."

Progress Continues In Refinement of Stereotype Process

ENCOURAGING progress in refinement and improvement of the newspaper stereotype process was reported by a number of speakers at the Stereotype session of the Chicago ANPA Mechanical Conference, at Edgewater Beach Hotel, on Monday, June 6. Presiding at the meeting as co-chairmen were Leven T. Deputy, Mechanical Supt., Dallas (Tex.) *Morning News*, and Production Mgr. Glen R. Hutchinson, Los Angeles *Times-Mirror* and *Daily News*.

Subjects discussed were concerned mostly with detail improvements. Among them were: Hi-Lo Chase, Tandem Curved Plate Router, Tenanon—a direct pressure medium for molding r.o.p. color mats without hand packing and durability of stereo press plates on long runs.

Shown among the many equipment exhibits were two recently developed stereotype curved plate casting machines. These were demonstrated by Goss Printing Press Co. and Wood Newspaper Machinery Co. Both machines have been designed to produce stereotype plates of precise dimensions with minimum physical exertion.

The Hi-Lo Chase

Mechanical Supt. Harold Ward, Grand Forks (N.Dak.) *Herald*, discussed eight months' experience with the Carlson Hi-Lo chase in his plant. This chase was first introduced at the Atlantic City 1954 ANPA Mechanical Conference. Ward described the modular chase which provides even molding resistance on all four sides. Three Challenge quoins are employed to lock the type matter. Aluminum bars are used for filler material. All chase elements are 0.916 in. high. Ward stated all chases are alike so that there are no special chases in use in the *Herald* plant. Each makeup man carries a small L-shaped key in his apron pocket with which to lock or unlock the quoins. The stereotype department, said Ward, likes the minimum resistance to molding pressure. (See p. 58, Aug. 1954 issue of *Printing Equipment Engineer*.)

Tandem Stereo Plate Router

Glen R. Hutchinson, Production Mgr., Los Angeles *Times-Mirror* and *Daily News*, discussed Sta-Hi Corporation's tandem plate router for routing duplicate stereotype plates. This is a new development fostered jointly by Sta-Hi and the ANPA Research Institute. Apparently, the machine in operation in Hutchinson's plant is so satisfactory that a report to the ANPA Mechanical Conference was warranted.

During the course of his address, Hutchinson stated: "The development of color in

(*Continued on Page 40*)

Brightype Reproduces Metal Composition By Photography for Platemaking Purposes

(Editor's Note—*Printing Equipment Engineer* regrets it is not possible to show illustrations of the Ludlow Brightype equipment. However, our readers may secure an idea about the equipment from Ludlow's George Morrison who discussed the subject at the June ANPA Mechanical Conference held at the Edgewater Beach Hotel, Chicago.)

IN HIS introductory remarks before the Chicago ANPA Mechanical Conference, June 1955, George L. Morrison of Ludlow Typograph Co. stated that the combination of your composing room and the Brightype equipment becomes a photocomposition unit with which photographic images identical with hot metal composition may be produced.

Brightype Products

The photographic product of Brightype may be as complete as desired. It may be used for bunched composition work. Black-and-white prints can be furnished. It may also be used for made-up jobs for which positives ready for directly printing down on offset or gravure press plates can be furnished. Jobs containing halftones and linework such as books, catalogs and publications, can be made up complete with positives made ready for printing down on the press plate as well as positives of process color plates which can be made from pattern plates, with bearing-metal eliminated by masking.

Morrison explained that Brightype equipment consists of a Brightype fixed-focus camera with special frontal lighting equipment, spray booth and equipment, makeup table and lockup equipment, sink, resist remover, temperature controlled sink, light table, wet contact printing equipment, paper drier, trimmer, timers and electroplating equipment, as well as the necessary miscellaneous items.

Spraying the Form

The first step in the Brightype process is to spray the form, (which can be locked up in a chase or galley) with a thin coating of lamp black suspended in a solvent which evaporates immediately. The coating is wiped off the printing surface with a smooth rubber block, and a freshly sanded rubber block to diffuse the reflection from the printing surface. This is an important part of the process, as mirror-like printing surfaces have been found to be undesirable.

The form is then put on the copyboard and held in a vertical position by a clamping device.

Light Source Action

The light source for the exposure is mounted on a disk about 4 ft. in diam., which revolves in an enclosure around the lens of the camera. The disk is studded with a number of Mazda lamp bulbs which, in rotating, produce a specular light that is evenly distributed over the plane of the sensitized material.

The maximum photographed area is contained in a 22 in. diam. circle. This provides a 12 in. by 18 in. or 14 in. by 17 in. max. rectangle. Larger irregular areas that will fit in a 22 in. circle may, of course, be used. It is important to remember that there is no limitation as to the character of the jobs that can be photographed together, such as bold type, light type, halftones, line work, etc. This makes it possible to combine a number of jobs and photograph them together.

After a form has been prepared for photographing, it is essentially a negative, in which the background is black and the printing image is reflective. When this form is photographed the image is always a positive.

The camera is fixed-focus, same size equipment, with two focal planes. The vertical position is used for black and white prints and for positives used in making albumen process negatives.

A plane mirror is used to laterally reverse the image. Positives made in horizontal position are used for deep-etch and rotogravure work.

With these two positions the image can read right or wrong, according to the process used. Emulsion-to-emulsion contact is used for any reproduction process, so image quality is never sacrificed.

No camera manipulation is required, since the focus and diaphragm are fixed. The operation is confined to loading, pressing a button for automatic exposure and unloading the sensitized material.

A still development technique is used, which is time and temperature controlled.

Black Coating Suppresses Background

The black coating is applied solely to suppress the background, and the sharpness of the image is not dependent on how tightly the black coating hugs the image.

When the coating is wiped off with a smooth rubber block, some coating may be removed from the angles of the image, but this is of no concern, as it cannot photograph.

Frosty faces usually reflect light very well due to the moving light source of the Brightype camera. If pits or holes in the face are so deep that they trap the black coating, pinholes which require retouching will result.

Variations Permissible in Type Height

The depth of field of the camera permits about 2 pts. above type-high or 2 pts. below type-high to be in focus, and if the printing surface can be cleaned up with the rubber block it will photograph. This tolerance is greater than would ordinarily be encountered.

All printing surfaces do not reflect alike. For example, oxidized copper and zinc surfaces will not reflect the same as clean type metal.

Either of two methods can be used to create a common, uniform reflectance. One method is a chemical removal of the oxides, which is done by applying a chemical to the rubber pad and moving it over the plate. This method is good if the form is photographed immediately, as re-oxidation becomes objectionable in about an hour.

The other method involves tin-plating by a contact electroplating method which does not alter the values of a halftone image, but provides a permanent reflective surface like type metal. It is recommended that the plates be tinned as they are received and before makeup.

If cuts are received with resist on them, such as cold top enamel, Gaco or KPR, it must be removed. A simple resist remover device is furnished for this purpose.

(Continued from Page 39)

newspaper plants . . . during recent years has made the need for more speed more critical . . . it is imperative that we try to do something that will help the production departments maintain tight schedules and speed up mechanical operations."

The speaker explained that the Tandem Router was designed to permit one operator rout two stereotype plates simultaneously. The machine is designed exactly like the Sta-Hi Single Router except it is wide enough to accommodate two stereotype plates on the routing cylinder. Overall width of the machine is 73 in., by 69 in. high, by 42 in. deep. The plate cylinder is equipped with a new type of lockup cylinder similar to the compression type, lever controlled lockup system on most web presses. One clip has been found adequate to hold the plate. It is operated by a lever at the side of the cylinder.

"The plate cylinder motion," explained the speaker, "is restricted to rotation only and is under hydraulic control as is also the router head control that traverses the plate. These hydraulic controls are of the lever type and replace the former handwheel controls. The right hand lever is used for the same function as the right hand wheel on the single plate router. The left hand lever is used for the same function as the former left hand wheel . . . a reasonably good operator should be able to master the machine in approx. three shifts.

"The router tools are operated by an air cylinder which brings the tools down to the plate by means of light foot pressure. The routing tools are connected by a turnbuckle arrangement that properly adjusts the two router bits."

Hutchinson explained care must be exercised in trimming and placing mats in the plate casting boxes in order to provide good register in the router at all times.

In response to a question from the floor, Hutchinson said that securing register of both plates is automatic by simply moving the plates against the head bar. If the plates are cast in register, they will rout in register. Craig Baker of Sta-Hi Corporation explained that mats are trimmed with the Sta-Hi Master Trimmer simultaneously at the head at an angle of 90 deg. after the mats are dried. He cautioned that when preparing to rout, the operator must be sure both plates are down to the stop. He also explained routing tolerances on the new Tandem Router.

Stereotype Mat-Pak Progress

Frank Stanczak, chemist, of ANPA Research Institute Laboratories, Easton, Pa., reported on the Mat-Pak method for molding and packing stereotype mats in one operation. His report was encouraging. He reported that field testing of Mat-Pak was terminated last year because of the inconsistency in the Mat-Pak material then available. He discussed the various trials and tribulations encountered by Kimberly-Clark Corp., the ANPA Research Laboratories and the South Bend (Ind.) *Tribune* where practical application and use of the Mat-Pak process was carried on over a period of time. Kimberly-Clark Corp., after evaluation tests, and screening various combinations of raw materials, and with the cooperation of ANPA Laboratories, came up with a promising design and production of a new run of Mat-Pak. The run looked promising because of the use of a modified resin impregnant which resulted in a wider range of production control.

Stanczak reported: "Mat-Pak has been made available for limited field testing at two newspaper plants—Fort Wayne (Ind.) Newspapers, Inc., and the South Bend (Ind.) *Tribune*. The speaker explained that field testing has been expanded to both high and low shrinkage plants because differences in performance due to shrinkage requirements had been noticed in laboratory testing. The South Bend *Tribune* employs $\frac{15}{16}$ in. shrinkage and the Fort Wayne Newspapers employ $\frac{5}{8}$ in. shrinkage." Stanczak added that a special test of very high shrinkage will be under way shortly in cooperation with the New York *Times*.

"When field tests indicate that a material can be made satisfactorily in production," said Stanczak, "that material will be made available to newspapers commercially."

Toward the conclusion of his address, Stanczak said: "As late as June 1, both the Fort Wayne (Ind.) Newspapers, Inc. and the South Bend *Tribune* were running approx. eight Mat-Pak pages per day in their daily editions. Errors in printed results have been at a minimum. The errors which have occurred were mainly loss of portions of borders between ads. They are not of a serious nature unless they continue to re-occur from day to day. Examination of both newspapers indicates that these errors can be overcome since pages with a similar makeup ran successfully.

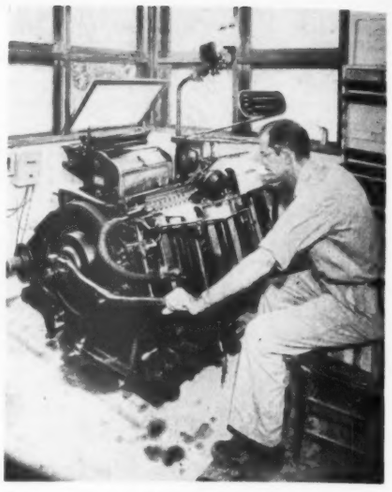
"Our consideration at the present time is to trace the errors which occur in the final printed sheet back to the original form in an effort to determine whether (1) Original form, (2) Handling technique, or (3) Material itself is at fault."

In answer to a number of questions from the floor, Frank Stanczak stated that in using Mat-Pak the total shrinkage time is not increased. The material on the back of the mat sets up quickly after moisture has been removed from the mat. The ring in the casting box definitely must be changed. In using Mat-Pak, cuts mounted 0.002 in. or 0.003 in. above type high are preferred. If the depth in open areas in the form are less than 0.040 in., then the plates must be routed. Stereotype Foreman Lloyd Wright of Fort Wayne (Ind.) Newspapers, Inc., reported that in using Mat-Pak, routing had been eliminated. In answer to another question, Stanczak said a Mat-Pak mat is handled the same as a standard mat.

Tenanon for R.o.p. Color

E. T. Giannoni, Stereotype Supt., Chicago *Tribune*, talked on Tenanon, a no-shrink mat material being developed by Tenak Products Co. for r.o.p. color mat molding. Tenanon is a resin impregnated sheet which is placed on top of the mat before molding. Molding is by direct pressure with lower platen of the press heated. A special molding combination is placed on top of form, mat and the Tenanon sheet. Experimental work at the *Tribune* has been with r.o.p. color mats. Giannoni explained that Tenanon is a material furnished by Kimberly-Clark Corporation and consists of resin impregnated tissues further treated by Tenak Products Co. before use in stereotyping. In effect, after molding and curing, the use of Tenanon results in a one-piece mat which eliminates some of the tedious and time consuming routing problems. Tenanon adds approx. 0.007 in. thickness to the mat. Non-printing areas are approx. 0.040 in. depth. Under the influence of heat, moisture and pressure, Tenanon swells approx. 0.040 in. in the non-printing areas.

Giannoni reported that the use of Tenanon greatly reduces necessity for makeready. It's use has improved the *Tribune's* overall printing and has helped the entire mechanical operation from engraving to pressroom. Tenak Products is attempting to increase heat conductivity of the Tenanon material to permit more rapid plate production. The pressroom reports lessening of the register problem. In halftones, from 10% to 15% smaller halftone dot is secured. The speaker reported he had used mats from five mat manufacturers and found that Tenanon can be used with any of them.



Automatic machinery is claimed as the reason for the success of John Moore, partially paralyzed owner of Sunset Lithographers of Santa Monica, Calif. A modern Heidelberg Automatic Press has enabled Moore to continue in the printing business. Most of his work is done while sitting in a chair in front of his press.

Glass Fibre Content Mat Experiments

Giannoni stated he had been experimenting with a glass fibre impregnated mat which he reported to be absolutely non-shrink irrespective of whether it is dried in 5 min. or 50 min. He said: "A few weeks ago we made a test run off the glass fibre mat in conjunction with Tenanon. The mats were dried under pressure from 3 min. to 5 min. The register was perfect and the slight difference in printing would not be noticeable to the average reader. The mat still is in the experimental stage. He concluded: "At the risk of appearing optimistic, we feel it will eventually work in with Tenanon as being ideal for color molding."

Stereo Plate Wear

The next subject to be discussed at the Stereotype Session was Plate Wear. A panel, in addition to the two co-chairmen previously named, assembled on the platform consisted of: Mark Mossing, Stereo Supt., Seattle (Wash.) *Times*; Ferd Mier, Stereo Supt., Detroit *Free Press*; Royal Rager, Stereo Supt., South Bend (Ind.) *Tribune*; E. T. Giannoni, Stereo Supt., Chicago *Tribune*; Harold M. Ward, Mechanical Supt., Grand Forks (N.Dak.) *Herald*; Frank Stanczak, ANPA Research Laboratories, Easton, Pa.

For this purpose Ferd Mier, Stereotype Supt., Detroit *Free Press*, delivered a paper on the subject.

In leading off his address, Mier stated that stereotype multi-color plates at the Detroit *Free-Press* have been run consistently up to 140,000 impressions without nickel plating. He stressed equipment and processing control methods necessary to make plates that will yield long runs. Plates must be made to a tolerance of 0.002 in. The aim is to cast an abrasive resistant plate. Actually, said he, this is not hard to do. It is mandatory that controls in the plate making process be used. (Editor's Note—See

Mr. Mier's article *Stereotype Metal Structure and Cooling—Their Effect on Long Run Printing Plates, May 1955 Printing Equipment Engineer.*) During the Question and Answer Period, Mier stated that temperature of metal in the pot is kept as near 580 deg. F. as possible. Pot mouthpiece temperature is readily determined through the use of a thermocouple instrument. He also asserted he believes natural rubber rollers are more resilient and carry a finer surface which minimizes abrasive action on the plate. During the discussion other plate wearing factors were mentioned, including condition of press, impression cylinder blankets, ink, paper, etc. Discussion in the meeting was lively and the session ran overtime.

ANPA RESEARCH PROJECTS COMMITTEE

Names of members of the Projects Committee of the American Newspaper Publishers Assoc. Research Institute, Inc., announced recently by President Franklin D. Schurz, are as follows:

Joseph E. McMullen, Production Mgr., Milwaukee (Wis.) *Journal,* Chairman
Ralph R. Cranmer, Business Mgr., Williamsport (Pa.) *Grit*
J. D. Funk, Santa Monica (Calif.) *Outlook*
E. L. Gaylord, Oklahoma City (Okla.) *Oklahoman and Times*
George L. Green, Providence (R.I.) *Journal and Bulletin*
Peter Miller, Publisher, La Salle (Ill.) *News-Tribune*
Dr. Burnett Thall, Toronto (Ont., Canada) *Star*
C. W. Welch, Business Mgr., Washington (D.C.) *Star.*

The committee considers projects in the mechanical field for the ANPA Research Institute, such projects to be proposed by committee members, ANPA members or manufacturers.

Engravers Hear of New Developments In Their Profession

ORIGINALLY scheduled as the Engraving and Advertising Session on the last day of the ANPA Mechanical Conference, Edgewater Beach Hotel, Chicago, Wednesday, June 8, it was decided to confine the session to the photography and engraving section of the program. One of the scheduled speakers had already appeared at another session. Since the hour was getting late, the paper prepared by George Fuller, Stereo Supt., Cleveland *Press,* was held for publication in one of the *ANPA Mechanical Bulletins* containing proceedings of the session. Like other sessions of the Conference, the program was devoted to user experience with new processes and to equipment developments.

John W. Park, Production Mgr., Chicago *Tribune,* and W. Watson Southam, Vice Pres., Southam Newspapers, Montreal, Can., served as co-chairmen of the meeting.

High Speed Film

Robert Dumke, Production Research, Milwaukee (Wis.) *Journal,* presented an illustrated slide talk during which he discussed the taking of 35 mm. pictures by news photographers with high speed film such as Eastman Tri-X. Many splendid examples were shown in greatly blown up form on the screen. Dumke explained, however, that this is only used in an emergency at the *Journal.*

Engravings from Facsimile

Business Mgr. Eugene McGuckin, jr., Duluth (Minn.) *Herald* and *News-Tribune,* illustrated his talk with many slides. He stated that Facsimile has certain shortcomings when compared with conventional Wirephoto. These, however, are offset by the very real economy of facsimile operation for those who, for the number of pictures used, find it impractical to pay the price for the conventional Wirephoto system. The speaker's newspapers use AP Photofax.

Dow-ANPA Process User Experience

Leon H. Standley, Garden Photoengraving Co., Mineola, N. Y., said that his company is a competitive shop. At present, his company makes engravings for the Long Island (N.Y.) *Newsday,* as well as the larger department stores in New York, N. Y. His company has installed three of the Dow-ANPA high speed engraving machines. His discussion was related to the difficulties experienced in changing from conventional to the new high speed etching process. The main obstacle encountered in the process was with respect to etching combination halftone and line plates. His firm tried the process in the Dow etching machine with the ingredients recommended by Dow. He related: "It was a nightmare with the blowing of tones, undercutting and blanking-off. The diethylbenzine and the aerosol worked fine, but the gelatine on a production basis was no good."

The speaker told about experimenting with ingredients, A, B and C in place of the Knox gelatine. "With Ingredient C," he said, "we received good results and found that with this ingredient we can produce consistently good plates. . . . With Ingredient C, which is more stable than the gelatine and Ingredients A and B, we can add a certain amount at given intervals and maintain a stable bath in the deep etch machine.

"We wanted more depth (in the line areas)," he said, "so we installed a third Dow machine and now etch 0.028 in. minimum without difficulty."

Standley stated the formula for the ingredients in the etching solution will be patented. He regretted not being able to give cost figures. He said: "We had to throw costs to the winds and try anything and everything to make the process work. Now that it is established and running smoothly, we will be able to compile cost figures."

Fast Etching Processes

George Johanson of Acme Telectronix, Cleveland, and D. L. O'Brien, jr., of Wire Coating and Mfg. Co., Cleveland, discussed their respective Acme One-Bite Etching Process and the WCM Self-Banking Etching Process which, with the etching machines, consist of a method for etching zinc coated magnesium plate stock. (See March 1955 and June 1955 issues of *Printing Equipment Engineer*).

Johanson told of the experimental work started five years ago by W. F. Alexander, Photoengraving Supt., the Cleveland *Press.* After discussing the properties of the bimetal sheet, with the cold top together with pre-sensitized plates, he got into a discussion of the actual etching operation. The tank of the Acme One-Bite Etching machine is of 15 gal. capacity but the machine works best at 2½ gal. which is drained off after each flat has been etched. Johanson stated that routing line work is eliminated with the possible exception of pimples which may be due to pin holes in the negative. The machine may be purchased outright at approx. $3,135. Instruction engineer service for two or three days may be obtained at $50 per day. A sheet of Z-M metal in 16 ga. costs approx. $5.60. Etchant itself is 50c per lb. Twenty-five machines have been built and are available.

Immediately following Johanson to the platform was D. L. O'Brien, jr., of Wire Coating and Mfg. Co., Cleveland, which company has also developed the WCM etching machine and etching solution for processing the zinc coated magnesium plate. O'Brien gave an extremely interesting technical account of the process.

It appears that each company will furnish a "complete package" to enable installation and use of its process in the photoengraving plant.

Ansco-Kemart Process for R.o.p. Color

"The new Ansco-Kemart fluorescent photo paper," said Harvey T. Holsapple, Vice Pres. of Kemart Corporation, Minneapolis, "produces color separation prints of much better definition and greater range in color."

Quoting Production Mgr. John Copeland and James Godbold of the Minneapolis (Minn.) *Star* and *Tribune,* in which plant first use of the fluorescent paper occurred, Holsapple said: "The new fluorescent photo paper enables producing separation prints of greater brilliance; making it possible for the engraving camera to capture a greater range of light tones while producing clearer, darker dark areas; saving time in engraving usually needed for staging and correcting color plates; and producing page casts with noticeably improved depth in the dot pattern of the lighter tone areas."

Holsapple continued with his explanation as follows:

"It is a plastic base, dimensionally stable paper, with a fluorescent coating, over which is laid the silver emulsion and a protective coating of gelatin.

"The emulsion is developed and fixed in a normal manner, like other photographic papers; but the resulting prints have a fluorescent characteristic, and because of the plastic base, the prints are dimensionally stable.

"The fluorescent paper requires no special processing or developing materials, except that the developing, fixing, and short-stop solutions must be of a type which are not in themselves fluorescent. Processing time is the same as for other plastic backed photo papers now in use."

The speaker then devoted the balance of his address to transparency evaluation and processing procedures.

Multiplied Plate Production

Ebbie Jennison, Engraving Supt., Minneapolis (Minn.) *Star* and *Tribune,* enthusi-

astically related his department's experiences with Ansco-Kemart paper. A summary of how the work is done in Jennison's plant is as follows:

"In making our negatives, we use a 70 line screen. Our detail exposure is approx. 2½ min., and flash exposure, 20 sec. on Ansco thin base film. To check our exposures, we use a gray scale, printed on Kemart paper.

"For the fluorescent exposure, the screen is raised and the special Kemart lights are used in place of the regular arc lights. This exposure varies from 2½ to 3 min., depending on how light you want the negative in the highlight area. We have found, to carry the color we want, our negatives should be about 45% in the highlight area before we give it the fluorescent exposure. Inasmuch as the fluorescent exposure affects only the very light tones, you hold the middletones and raise the highlights to practically a pinpoint.

"We have not staged or re-etched any of our plates since we began using the Ansco-Kemart paper. We are producing six to eight sets of three-color plates a week. We are doing this now with the same number of men it took to produce one set of plates a week before we adopted the Kemart process."

Improved Mailroom Equipment Leads Toward Automation

THE mailroom session, under Chairman W. E. Gibbons, Production Mgr., Portland (Ore.) *Oregon Journal*, met at the Thursday morning, June 7, meeting of the ANPA Mechanical Conference, Edgewater Beach Hotel, Chicago. Theme of this session was the advance of automatic equipment over the past year.

Gibbons reported the new Cutler-Hammer stacker had gone into a trial run period at the Milwaukee (Wis.) *Journal* on Friday, June 3, and was counting perfectly. "There was no change in the counting device," he said. "There is a difference, however, between paper as it just comes off the press and paper which has stood for two or three days," Gibbons added. "We have been working mostly on trying to correlate those differences."

Leon A. Link, production manager, Cleveland *Plain Dealer* and *News*, wanted to know what the space requirements are of the stacker. F. E. Howdle, Cutler-Hammer design engineer who has been very close to the development of the stacker, answered most of the questions. The reply to the preceding question was that the Cutler-Hammer stacker needs 8 ft. of height, and 4 ft. by 6 ft. of floor area.

Another question from the floor was related to changes in the conveyor system. There have been none made, was the answer.

"Will the use of the stacker affect speed of delivery from the presses?" was another question. "No," was the reply. "It may affect the size of the bundles, however. The stacker operates most efficiently with a bundle size of 30-to-60 or 35-to-75 papers per bundle. Running the machine at high speed on smaller bundles increases the chance of error. So it is most advantageous to run the machine at the maximum bundle height at all times."

Harry Eybers, production manager, Washington (D.C.) *Post* and *Times Herald*, wanted to know if there had been major changes in the machine.

"Yes," was the reply. "In this second attempt, every effort was made to design a machine to accept as wide a difference in product as possible," Howdle said. "The machine now is relatively insensitive to off-center bundles and misfolded bundles. There are still some limitations in this regard, of course. But the machine has been greatly improved. The counting system is the same. The stacker utilizes the leading edge of the papers and requires a minimum of 3 in. lead. Principles of operation are all the same."

Don Shortell, mechanical superintendent, St. Petersburg (Fla.) *Times*, asked when the machine would be available. The reply was that Cutler-Hammer hoped to standardize on the unit by fall and that production models would then be available by the first of next year—maybe.

Richard Powers, mechanical superintendent, Philadelphia *Bulletin*, wanted to know if the unit was equipped with jam circuits to shut the presses down in case of a tie-up in the stacker. Yes, was the reply. "There are two jam circuits placed in strategic spots," said Howdle. "Only on-the-job experience will prove whether they are in the best possible positions, however."

Vern R. Spitaleri, research director, Miami (Fla.) *Herald*, asked if there had been any progress on the pre-set selectors for use with the stacker. Yes, was the reply. ANPA had polled its membership relative to what was wanted in such a programming system. These replies had not yet been tabulated. When they are, however, Cutler-Hammer will then proceed from the basic principles thus dictated.

Signode Automatic Feeder

William W. Powers, Signode Steel Strapping Co., gave a report on field experience of the Signode Automatic Feeder. He said: "Field testing last fall of Signode's first model, automatic, in-line feeder indicated certain changes and improvements were necessary to simplify design. As a result, Signode's management decided to make a re-designed model. This second model is being field tested again at the Detroit *Free Press* and is in operation there now.

"I know you will appreciate the following information concerning our (Signode) in-line feeder: (1.) It is designed to be fitted and cycled to every Signode automatic wire tying machine. (2.) It is an in-line feeder. That is, it will follow through in a straight line from the power conveyor to the Signode wire tying machine. (3.) With controls of the automatic feeder, it will provide single or double ties. (4.) The space requirement is 54½ in. long by 42 in. wide by 58 in. high. (5.) We estimate the selling price will be in the neighborhood of $4000 per machine, but the selling price has not been definitely established. (6.) The company is now proceeding with the manufacture of 10 in-line feeders, expected to be ready soon.

"We (Signode) have made a development project of single strand continuous wire in 500-600 lb. lots of galvanized soft basic wire and have learned that it presents engineering, packaging, and handling problems," Power said. "We are working on this and have done some experimenting. The engineering phase of paying off the wire from a core to the machine is nearly complete. The type of package to be used will not be standardized. Every steel company has been working on this and there are nearly as many different packaging ideas as there are steel companies. We expect to be able, very shortly, to offer wire in a pack of some type."

Powers was asked what the function of the upper arm was. He replied: "The upper arm holds the upper wrapper in place. It rides independently of the conveyor. It also has a slight compressing effect."

Eybers, of the Washington (D. C.) *Post*, asked whether the machine is completely automatic or whether a man or men would still be required to operate it. The reply was that at least one man would be required to set switches and be available in case of jamups.

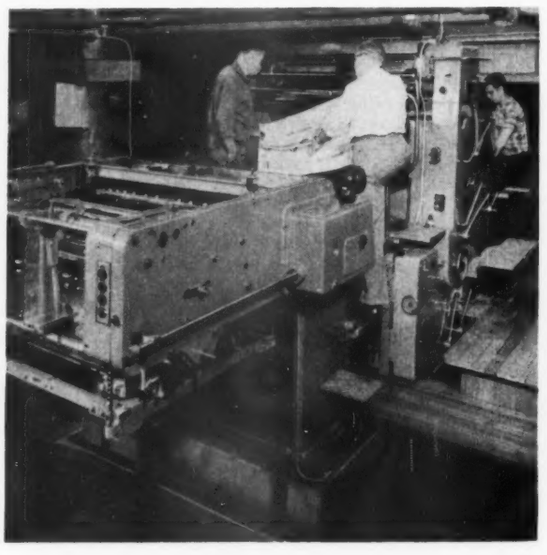
Another question was in regard to the total through-put of the machine. The reply: 26 ties per min.

W. Watson Southam, vice president, Southam Newspapers, Montreal, Can., asked what the price of the unit might be. The answer was that it would probably cost in the neighborhood of $12,500.

Cheshire Mailing Machine

In line with the general theme of automation in the mailroom, Harry E. Burris, mailroom superintendent, Harrisburg (Pa.) *Patriot* and *News*, gave his paper's experience in automating its addressing procedures.

"Five years ago," he began, "we were faced with the problem of getting into our mail editions later news than train schedules and earlier bulldog would permit. The core of our problem lay in the old method of hand stamping the addresses . . . With that in mind, we set out on a six month search and were finally rewarded when we discovered a tabloid model Cheshire being used by a machinist weekly in Washington,



Kistler of Denver Expands—Pictured is the recently installed Miehle No. 41 Two Color Offset Press manufactured by Miehle Printing Press & Mfg. Co. at the W. H. Kistler Stationery Co., Denver, Colo. The new press was purchased to meet the expanding demands for lithography in the Denver area.

D. C. It was the answer to our problem if it could be converted to standard newspaper use . . . After many trips to Cheshire Co., Chicago, and hundreds of newspapers for testing, this 48 sq. ft., 3,000 lb. baby was delivered . . . The machine was engineered to handle a standard size paper from 8 to 108 pages at a top speed of 16,000 stamped papers per hour. It uses roll strip prepared in the Addressograph room. Labeling heads are equipped with solenoid throw-out switches to prevent label attachment unless newspapers are in proper position. Micro switches stop the machine in case of possible jams.

"As with many pieces of modern machines," continued Burris, "we found our's infested with bugs. There were times when the problems created by the machine seemed almost as great as the problems we had without it. However, we had an investment and an idea and a determination to make the baby grow up to the job for which it was intended . . .

"The machine is fully automatic."

The Starwrapper Field Tests

H. F. Spragg, Toronto (Ont.) *Star*, gave a report on the Starwrapper, latest addition to the Wallastar Automatic Bundler line. "Six installations have been made and closely observed," said Spragg.

"It has been established that application of bottom wrappers automatically in no way reduces the tying speed of the Wallastar," he continued. "Indeed it has been shown that, with the independent machine, bottom wrappers may be applied at a rate of more than 40 bundles per min.

"Since the rolled Kraft stock required by the Starwrapper may be obtained at a lower price than cut sheets of the same basis weight, use of the machine has become more attractive in many plants."

The Wiretyer

After showing a film on the Wiretyer Corporation wire tying machine, L. F. Fallon of that company was asked several questions about the equipment.

One question asked was what type of package was being considered for wire for the Wiretyer. The answer was that Wiretyer was interested in a pay-off pack.

Richard M. Fitzgerald, mechanical superintendent, Miami (Fla.) *Herald*, told the meeting of a wire mesh feeding conveyor used in conjunction with the *Herald's* Wiretyer machine. Because of the center drive on this type of conveyor, it can be made to make a complete circle in a 6 ft. radius.

Conference Dates

(With Organization Name and Principal Officer)

American Photoengravers Assoc. — 1955 Conv., Waldorf-Astoria Hotel, New York, N. Y., Oct. 10-12. Exec. Secy. Frank J. Schreiber, 166 W. Van Buren St., Rm. 430-A, Chicago 4, Ill.

ANPA Mechanical Conf. — 1956 Conf., Statler-Hilton Hotel, Dallas, Tex., June 5-7. Mgr., ANPA Mechanical Dept., Richard E. Lewis, 370 Lexington Ave., New York 17, N. Y.

Book Manufacturers' Institute—1955 Conf., The Greenbrier, White Sulphur Springs, W. Va., Oct. 13-15. Secy. Miss A. G. Watson, 25 W. 43rd St., New York 36, N. Y.

Fifth District Craftsmen's Conf. — 1955 Conf., Netherland-Plaza Hotel, Cincinnati, Aug. 6. Secy.-Treas. Dave Walker, Adm. Asst., Graphic Arts Assoc. of Michigan, 320 W. Lafayette St., Detroit 26.

Graphic Arts Trade Assoc. Executives — 1955 Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., Oct. 13, 14. Secy.-Treas. Arthur L. Johnson, Graphic Arts Assoc. of Milwaukee, 704 W. Wisconsin Ave., Milwaukee 3, Wis.

Gravure Technical Assoc. — 1956 Annual Meeting, Hotel Biltmore, New York, N. Y., Feb. 1-3. Secy. Len S. Pinover, Room 4800, 30 Rockefeller Plaza, New York 20, N. Y.

Great Lakes Newspaper Mechanical Conf. —1956 Conf., Schroeder Hotel, Milwaukee, Wis., Jan. 29, 30, 31. Secy-Treas. Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press*.

Illinois Newspaper Mechanical Conf. — 1955 Conf., Leland Hotel, Aurora, Ill., Sept. 24, 25. Secy.-Treas. Arthur Kramer, Joliet (Ill.) *Herald-News*.

Intl. Assoc. Electrotypers & Stereotypers—1955 Conf., Shoreham Hotel, Washington, D. C., Oct. 19-22. Exec. Secy. A. P. Schloegel, 701 Leader Bldg., Cleveland 14.

Intl. Assoc. of Printing House Craftsmen — 1955 Conv., Netherland-Plaza Hotel, Cincinnati, O., Aug. 7-10. Exec. Secy. Pearl E. Oldt, Rm. 806, Transportation Bldg., 307 E. Fourth St., Cincinnati 2, O.

Intl. Graphic Arts Education Assoc.—Exec. Secy. Samuel M. Burt, 719 Fifteenth St. N. W., Washington 5, D. C.

Intl. Printers Supply Salesmen's Guild — 1955 Conv., Netherland-Plaza Hotel, Cincinnati, O., Aug. 7-10. Secy. Myron F. Lewis, 608 S. Dearborn St., Chicago 5.

Intl. Typographic Composition Assoc. — 1955 Annual Conv., Hotel Claridge, Atlantic City, N. J., Sept. 7-10. Secy. Frank M. Sherman, 1015 Chestnut St., Philadelphia 7.

Iowa Daily Newspaper Mechanical Conf. Secy.-Treas. Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald*.

Kansas - Missouri Newspaper Mechanical Conf. — 1955 Conv., Town House Hotel, Kansas City, Kan., Sept. 10, 11. Kansas Secy.-Treas. Larry Miller, Kansas Press Assoc., 701 Jackson St., Topeka, Kan. Missouri Secy.-Treas. William A. Bray, Missouri Press Assoc., 220 Walter Williams Hall, Columbia, Mo.

Lithographers National Assoc. — Exec. Dir. W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

Mid-Atlantic Newspaper Mechanical Conf. —1956 Conf., Lord Baltimore Hotel, Baltimore, Md., March 8-10. Conf. Dir. Theodore A. Serrill, PNPA General Mgr., 300-312 Telegraph Bldg., Harrisburg, Pa.

National Assoc. of Litho Clubs—1956 Conv., Lord Baltimore Hotel, Baltimore, Md., April 20-21. Exec. Secy. Elton N. Baker, 833 N. Orleans St., Chicago 10, Ill.

National Assoc. of Photo-Lithographers—1955 Conf., Hotel Statler, Cleveland, O., Sept. 21-24. Walter S. Soderstrom, 317 W. 45th St., New York 36, N. Y.

National Printing Equipment Assoc., Inc.—1955 Conv. meets concurrently with Printing Industry of America, Hotel Chalfonte-Haddon Hall, Atlantic City, N. J. Secy. James E. Bennet, 140 Nassau St., New York 38, N. Y.

National Safety Council Printing and Publishing Section—1955 Meeting, Conrad Hilton Hotel, Chicago, Oct. 17-19. Staff Rep. James D. Saul, National Safety Council, 425 N. Michigan Ave., Chicago 11.

New England Mechanical Conf. — 1955 Conf., Hotel Statler, Boston, Mass., Oct. 15, 16. Secy.-Treas. Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day*.

New York State Capital District Mechanical Conf. — 1956 Conf., Sheraton-Ten Eyck Hotel, Albany, N. Y., Jan. 28, 29. Dir. Floyd Laurenty, Schenectady (N. Y.) *Union-Star*.

Northwest Mechanical Conf.—1956 Conf., tentatively set for Radisson Hotel, Minneapolis, Minn., Feb. 18-20. Secy.-Treas. Ralph N. Carson, Linecasting Instructor, Dunwoody Industrial Institute, 818 Wayzata Blvd., Minneapolis.

Pacific Mechanical Conf. — 1955 Conv., Sheraton-Palace Hotel, San Francisco, Calif., Sept. 9-11. Secy. Edward Maggi, Phillips and Van Orden, 870 Brannan St., San Francisco 3.

Packaging Institute Assoc. — 1955 Forum, Hotel Statler, New York, N. Y., Nov. 1, 2. Exec. Dir. Laurence V. Burton, 342 Madison Ave., New York 17, N. Y.

Printing Industry of America—1955 Conf., Hotel Chalfonte-Haddon Hall, Atlantic City, N. J., Oct. 15-20. Gen. Mgr. James R. Brackett, 719 Fifteenth St., N. W., Washington 5, D. C.

Research and Engineering Council of the Graphic Arts Industry, Inc.—1956 Meeting, Edgewater Beach Hotel, Chicago, Ill., May 9-11. Managing Dir. Robert E. Rossell, 719 Fifteenth St., N. W., Washington 5, D. C.

Rocky Mountain Mechanical Conf.—Secy. Mark McCoy, Union Printing Co., 2155 Lawrence St., Denver, Colo.

Screen Process Printing Assoc., Intl.—1955 Conv., Ambassador Hotel, Atlantic City, N. J., Sept. 10-14. Exec. Secy. Robert H. Blundred, 549 W. Randolph St., Chicago 6.

SNPA (Eastern Div.) Mechanical Conf. — 1955 Conf., Hotel Roanoke, Roanoke, Va., Aug. 22, 23. Secy. Ray B. Crow, Southern Newspaper Publishers Assoc., P. O. Box 1569, Chattanooga 1, Tenn.

SNPA (Western Div.) Mechanical Conf.—Secy., Walter Johnson, jr., P. O. Box 1569, Chattanooga 1, Tenn.

Southern Graphic Arts Assoc.—1956 Conv., Eola Hotel, Natchez, Miss. Secy. Charles E. Kennedy, 1514 South St., Nashville, Tenn.

Technical Assoc. of the Graphic Arts — 1956 Conf., Edgewater Beach Hotel, Chicago, May 7-9. Secy.-Treas. Philip E. Tobias, 140 N. 6th St., Philadelphia 6, Pa.

Using Radiant Heat To Dry Ink

By CHARLES C. DOYLE*

**President, The J. E. Doyle Co., Cleveland*

THE employment of electrical heating units to dry ink in printing is growing to such an extent that it seems advisable to make some up-to-date explanation in regard to how they operate. The term infrared is commonly used in this connection and has become a much abused and misused word. Actually it is used as a short cut for the phrase "transfer of heat by radiation".

Heat Transferred in Three Ways

As a matter of fact, there are three ways in which heat is transferred.

Conduction: This is the way heat is transferred when a housewife irons. There is actual contact between a heated surface and the material. Also when paper in a mill is run over drying cans the heating is by conduction, or actual touching. This method is used for driving out moisture and is not always suitable for printing where the moisture in the paper must be retained while the ink is dried.

Convection: In this case, the air is heated and the hot air is circulated. Homes with hot air furnaces are heated by convection. Conventional drying ovens with circulated hot air are also convection driers. This type of drying is also not always suitable for drying printing ink as it sometimes drives the moisture out of the paper.

Radiation: All surfaces can radiate heat and the hotter the surface the greater the radiation. The principle simply is that so much heat is generated that the adjacent air has not the volume to absorb it so that it passes through the air to the first available surface. When measured in wave lengths which are longer than light waves but shorter than radio waves, the correct name is infrared rays.

Principle of Drying

Now here is an important item in connection with printing. Every high school student learns in his physics classes that black absorbs heat and that white reflects it. Therefore, on a printed piece of paper the black areas accumulate heat to a satisfactory drying degree but the unprinted (white) areas reflect it so that the paper itself is not materially raised in temperature, and its valuable moisture content is not disturbed.

This can be easily demonstrated with a Doyle drier, frequently referred to as the open glow hot coil unit. This consists basically of a cylindrical refractory core on which a coil of wire is wound tightly and heated to a high temperature by the electrical current passing through it. To demonstrate, take a piece of blank white paper and draw a heavy black pencil mark across it. Then expose it under an open glow hot coil unit. If left long enough, a matter of less than a minute, the paper will burn through the black line but the rest of the sheet will be barely warm.

Moisture Content Not Affected

The same principle applies to a freshly printed sheet of paper, except as to the time of exposure, which is only a relatively few seconds. The printed areas will be raised in temperature but not the unprinted areas. Thus a satisfactory drying temperature is secured for the ink without affecting the moisture content of the paper. The same holds true with colors in varying degree, but light colors do not need so much drying because the offset caused by light colors like yellow is not noticeable.

Three Types of Drying

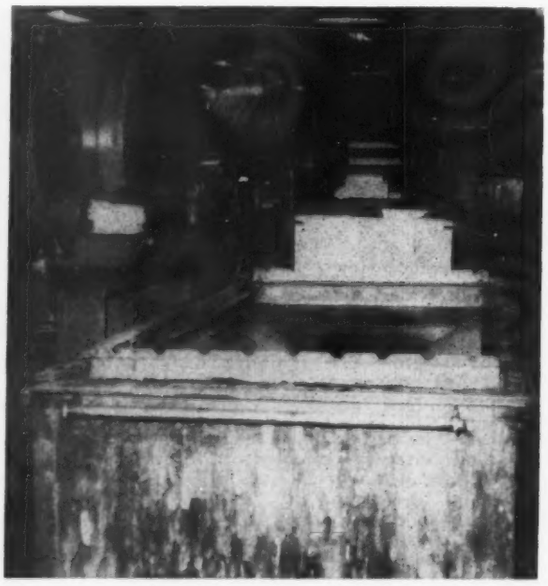
There are three main types of drying in printing, namely, evaporation, penetration and oxidation. To oxidation might be added polymerization, or the vulcanizing process used for rubber and plastics which is not drying at all, but chemical change caused by heat. In fact, the very word drying is a misnomer because often we do not mean drying. Newspaper inks, for instance, have a non-drying oil base. They never dry but the results are satisfactory through penetration or absorption.

Open Glow Equipment

Drying units of the open glow hot coil type are used extensively in the manufacture of printed Christmas wrappings, chewing gum wrappers and work of that character. Such units, or heating elements, are suitable for high temperature operation. They come up to heat quickly and can be shut off quickly, and are suitable for applying heat to a fast moving web. Such elements are used in individually controlled groups so that only enough groups are switched on to heat what width of paper is going through the press. Units are placed end to end in reflectors to form the groups and these are usually in two parallel rows. The latter may be pivoted to be turned away from the web so that their residual heat will not burn the paper when the press is stopped and the current automatically shut off.

Production Measured Accurately

The reason why these drying units are used by many converting people is that

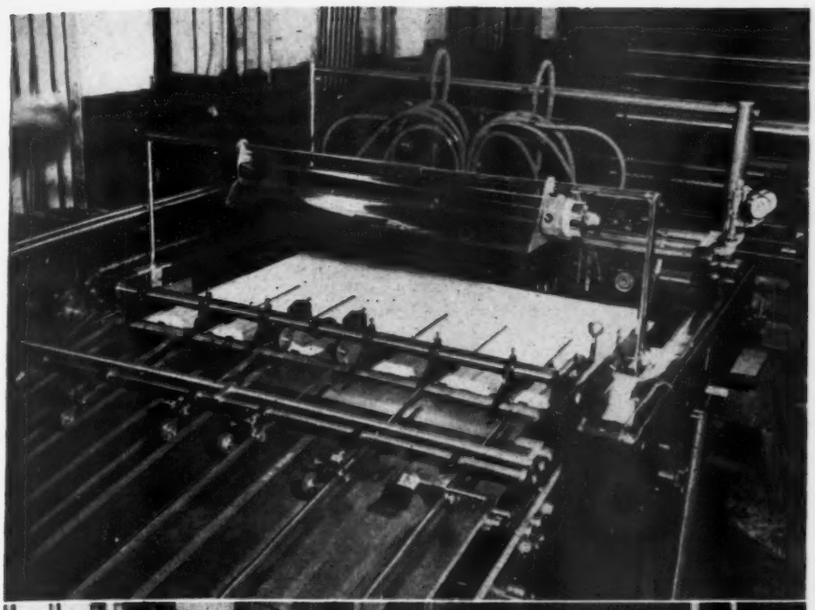


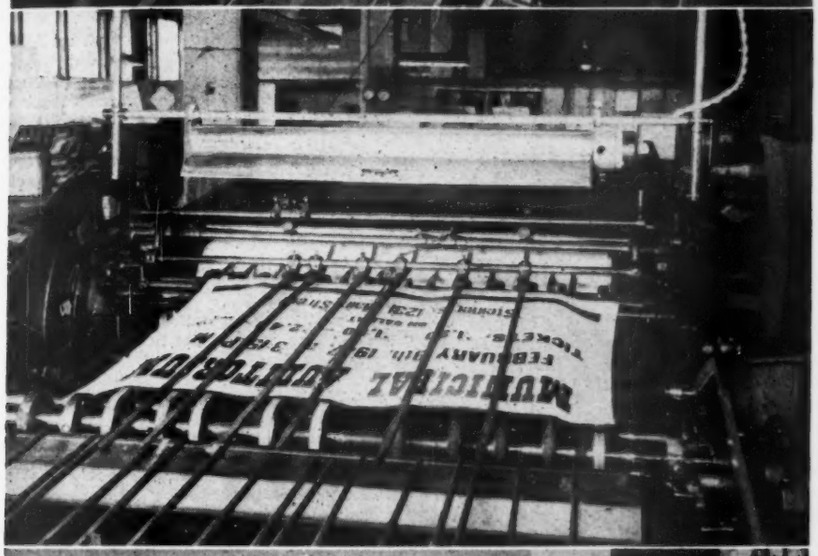
Roller Wash Truck—A useful "made in the shop" device in the Parthenon Press plant at Nashville, reports P. R. Russell, is a movable truck designed for washing rollers, particularly those from large cylinder presses, most of them too big and heavy for one man to handle.

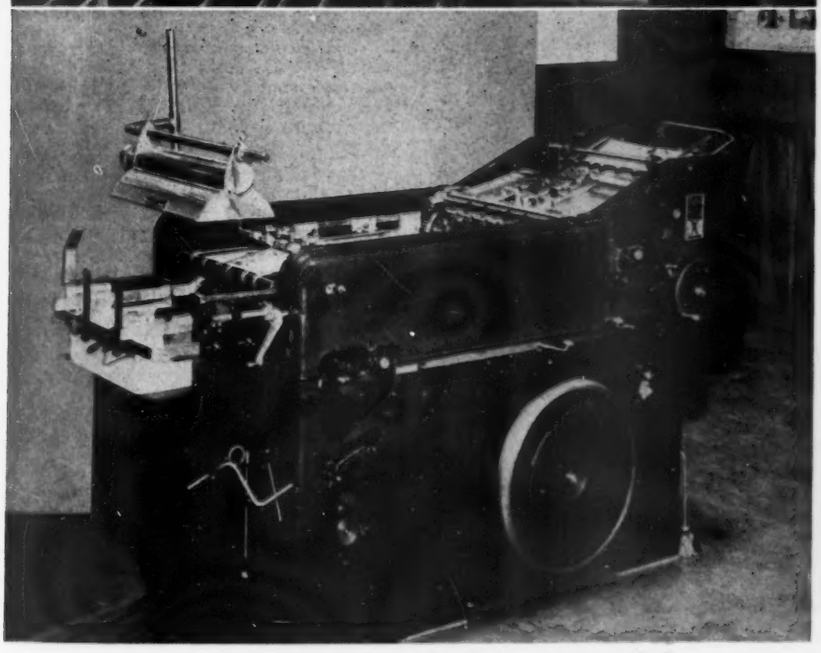
With this truck, seen in this illustration alongside of a 5-0 Miehle cylinder, it is possible for rollers to be removed, placed on the truck by two porters, then one man can continue with the washing while the other does other work. It actually saves the services of several men on the roller cleaning staff.

Construction is simple. The notched cross rails for holding the ends of the roller cores were actually taken from an old dismantled cylinder press in the plant. The truck was constructed in a Nashville machine shop of heavy gauge steel. A tapered sheet metal pan (discernible in the picture) collects the gasoline or other wash fluid and allows it to flow through an opening into a removable metal can on an open flat platform that forms the bottom section of the truck. If shorter rollers are to be washed, one end of the core is rested on this collection pan. The truck can be pushed easily from one press to another.

Since the fluid used is highly inflammable, a small fire extinguisher is attached to the end of the truck not seen in the picture for use in event of a fire







Upper Picture—*Infrared drier at feeder end of a Harris press for pre-heating the sheets to warm them and remove surface dampness. This gives the paper greater affinity for ink and results in a clean impression with full color from a minimum amount of ink, thus simplifying the drying problem. There is also a drier at the delivery end of this same press.*

Middle Picture—*Infrared drier suspended from the ceiling above the impression cylinder of a Miehle press. This may increase the efficiency of the drying unit because it heats the sheet before and after the impression and permits longer travel under heat before reaching the delivery pile.*

Lower Picture—*Infrared drier on Little Giant press. The drier is arranged to deliver low, medium and high heat. It uses 3200 w. at high heat.*

it is possible to measure production with a great deal of accuracy. For instance, a manufacturer of printed table cloths or printed paper napkins knows from day to day exactly how much production comes off each machine because he is running on the same job for long periods of time. Therefore, he is quick to recognize the effectiveness of the heating qualities.

Work Variety Disadvantage

In the job printing field it is not always possible to compare production so accurately because of the wide variety of jobs, although the same advantages exist potentially. The tendency in these shops is to lower the heat, run the presses more slowly and increase the amount of offset spray. The result is inferior work and slower speeds which puts these plants at a distinct disadvantage.

To get this message to the general printer is often a thankless job because claims of superiority are made for heating qualities ranging from ordinary light bulbs to heating units designed for kitchen stoves.

Convection Heaters

Consideration of just one detail in the design of the open glow hot coil heating element will make this plain. As previously explained, this consists of a refractory core with a wire wound tightly around it. With electrical heating elements such as are used for stoves or, say, a bathroom heater, the wire is formed in the shape of a spiral spring and then slipped loosely over a porcelain core. Thus air gets in behind the wires and between the turns and is heated. In other words, this is heating by convection which is alright for bathrooms and stoves but entirely unsuited for drying ink, as was explained.

However, when the wire is wound tightly it gets very hot and there is no air around it to absorb heat. The latter has to go somewhere so it travels to the nearest surface which happens to be a piece of paper printed with ink which is still wet, and we have a transfer of heat by radiation. In certain invisible wave lengths, this is infrared radiation.

Akron, O., Beacon-Journal Has Built for the Future

By ARTHUR W. ZIMMERMAN, jr.

EXPANSION and modernization of the Akron (O.) *Beacon-Journal* building and plant equipment was predicated on plans for the next 25 or 30 years of the newspaper's growth. History of the *Beacon-Journal's* trading area over the past quarter-century was studied. Predictions of future growth were made. The result: A threefold increase in plant area and acquisition of much new equipment.

At the same time they were planning this expansion, mechanical department executives took a fresh look at the operation of their departments. That fresh look inspired improvements which may well be adapted to other newspapers even though the latter may not be making a big expansion.

The *Beacon-Journal* has a total of 475 employees. Its daily circulation is 160,000, of which 92.7% is home delivered. Sunday edition circulation is 170,000.

Deserving a large share of the credit for the improvements which were made is James H. Curry, mechanical superintendent. Other mechanical department executives of the paper include Roy Anderson, assistant to the mechanical superintendent; William Church, composing room foreman; J. T. Mahan, stereotype room foreman; Jack Harris, engraving room foreman; Willard Chapman, pressroom foreman; and Jesse Hagenbush, mailroom foreman.

Bertram Bernstein was the supervising engineer on the location in Akron for the engineering firm of William Ginsberg Associates, New York, N. Y.

Area of the old *Beacon-Journal* plant was 50,000 sq. ft., and that area, which has been completely remodeled, now houses all of the business and editorial offices. The newly constructed portion of the building contains 90,000 sq. ft. and houses the mechanical departments of the newspaper. Thus the overall increase in work area is practically threefold from 50,000 sq. ft. to 140,000 sq. ft.

The business and editorial offices are air conditioned with Carrier Corporation units. Each floor is supplied with a separate conditioning unit or units, depending upon the volume of the area to be conditioned. Altogether there is 140 T. of air conditioning capacity in the building. A recirculating water system using city water is employed.

The mechanical departments are served with a continuous supply of filtered air through a complete exhaust system for each department. No air is recirculated. Two penthouses on the roof house all of the fan equipment. Air in the mechanical departments is changed a minimum of 8 to 10 times an hour and can be varied during different seasons.

This canopy or hood separates the proofroom from the rest of the composing room at the Akron (O.) *Beacon - Journal*. The canopy drops down from the ceiling. This hood keeps out up to 60% of the machine noise from the adjacent composing room area but does not interfere in the least with traffic to or from the proofroom. Result: Time and steps are saved.

Well-lighted Working Areas

There is fluorescent lighting throughout the building. In the business offices, the lights are flush mounted in the ceiling. There is a minimum of 50 to 60 footcandles of light at desk level. While there's been a 10 to 15% drop in intensity since the system was installed, Bernstein predicted the light would not fall below 50 footcandles in these areas. In the mechanical departments the lights are suspended from the ceiling, mostly in grid-type fixtures.

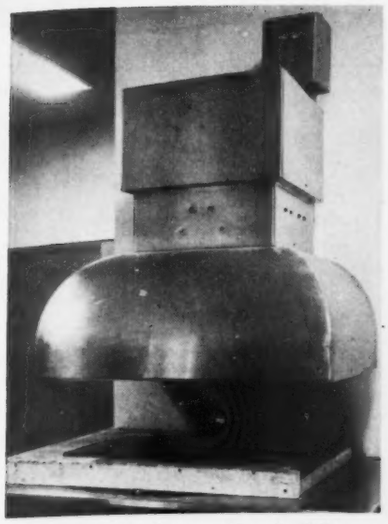
Ceilings in the proofroom and in the editorial and business offices are finished in acoustical tile. Elsewhere they are painted.

Walls in the business offices are covered with a walnut-finish Flexwood. In the mechanical departments, walls are finished in a glazed tile, Natco Vitritile. The various departments are of different pastel colored finishes.

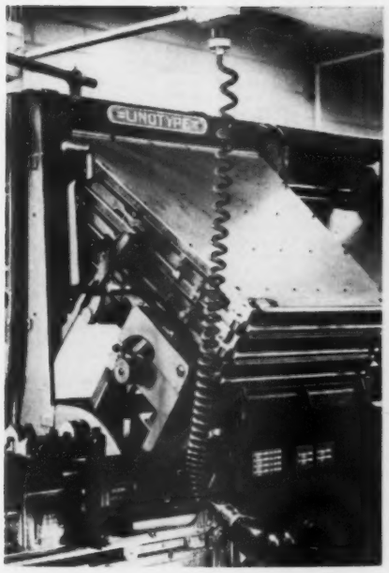
Floors in the composing room and the mailroom are maple wood block set in herringbone pattern. In the offices, floors are finished in an asphalt tile with some public areas finished in terrazzo. In the pressroom, they're a combination of con-

Akron (O.) Beacon-Journal Mechanical Executives

JAMES H. CURRY, Mechanical Supt. | ROY ANDERSON, Asst. Mech. Supt. | JACK HARRIS, Engraving Foreman | WILLIAM CHURCH, Composing Foreman | J. T. MAHAN, Stereotype Foreman | WILLARD CHAPMAN, Pressroom Foreman | JESSE HAGENBUSH, Mailroom Foreman



Film or Print Drying Board—When a plate bearing film or prints is laid on the drying board in the photoengraving department of the Akron (O.) *Beacon-Journal*, the shank end of a plunger extending upwardly through the center of the board is depressed which in turn switches on the heating unit and blower fans housed above the canopy. When the plate is taken off the board, the unit automatically shuts off.



The Keyboard Lamp on each of the 37 linecasting machines at the Akron (O.) *Beacon-Journal* is installed with an extensible coiled cord approx. 1½ in. diam. One company supplying this cord is the Coiled Cords Co., New Haven, Conn., or it may be obtained through your local electrical supply house.

Jointed electrical conduit near ceiling allows certain machines in the Akron (O.) *Beacon-Journal* ad room to be faced in a different direction. Through four jointed condulets, as shown here, a saw-trimmer for instance can be rotated 360 deg. or moved a short distance. This can be done by simply getting the men at hand to do the job.

crete and Alan Wood Steel Co. Algrip. The latter is used in the work areas around the press units and on press cat walks. Elsewhere floors are finished in tile.

Maintenance Subcontracted

One noticeable feature in walking through the *Beacon-Journal* plant is the lack of trash or wastepaper lying around. When asked if the maintenance of the new building was a problem, Curry replied: "No, because we hire an independent contractor to do our clean up maintenance. We found that we eliminated a lot of headaches in getting and keeping clean up personnel by hiring this outside company. Once a day, usually during the evening, the contractor's personnel comes in and gives the plant a thorough cleaning. It works fine."

Composing Room Expanded

The area of the composing room went from 6000 sq. ft. in the old building to 13,500 sq. ft. in the new plant. Typesetting capacity increased about 25%; ad production facilities were doubled. Linecasting equipment was increased from 29 to 37 machines. The keyboard light on each machine is installed with a coiled flexible cord attachment.

The number of ad alley banks was increased from 10 to 20; the number of saw-trimmers increased from 5 to 10, half of which are Hammonds and half Centurys. There are three Ludlow casting machines and five Ludlow matrix cases. Three Elrod machines are used for producing spacing material while a fourth is used for borders. And there is plenty of room for expansion of the composing.

In the whole *Beacon-Journal* plant under present arrangements, there is space for 7000 T. of newsprint storage. That's about 4 months' supply.

Unique Proofroom

The proofroom is situated in the center of the composing room area (see the floor plan and photo). Here is another point at which the *Beacon-Journal* made a significant departure from common newspaper practice. The proofroom, instead of being as difficult as possible to get into and out of, is wide open without any walls. A "hat" canopy which drops down 5 ft. from the ceiling and stops 7 ft. from the floor is the only separation between the proofroom and the rest of the composing room area. Thus it is easily reached from any direction. Yet the "hat" stops up to 60% of the machine noise. The inside of the canopy is lined with acoustical tile.

The composing room has green tile walls. All linecasting machines are faced in one direction instead of in rows with operators back-to-back. That has been done so that operators won't have to face light coming in from windows and also to cut down on impromptu prayer meetings.

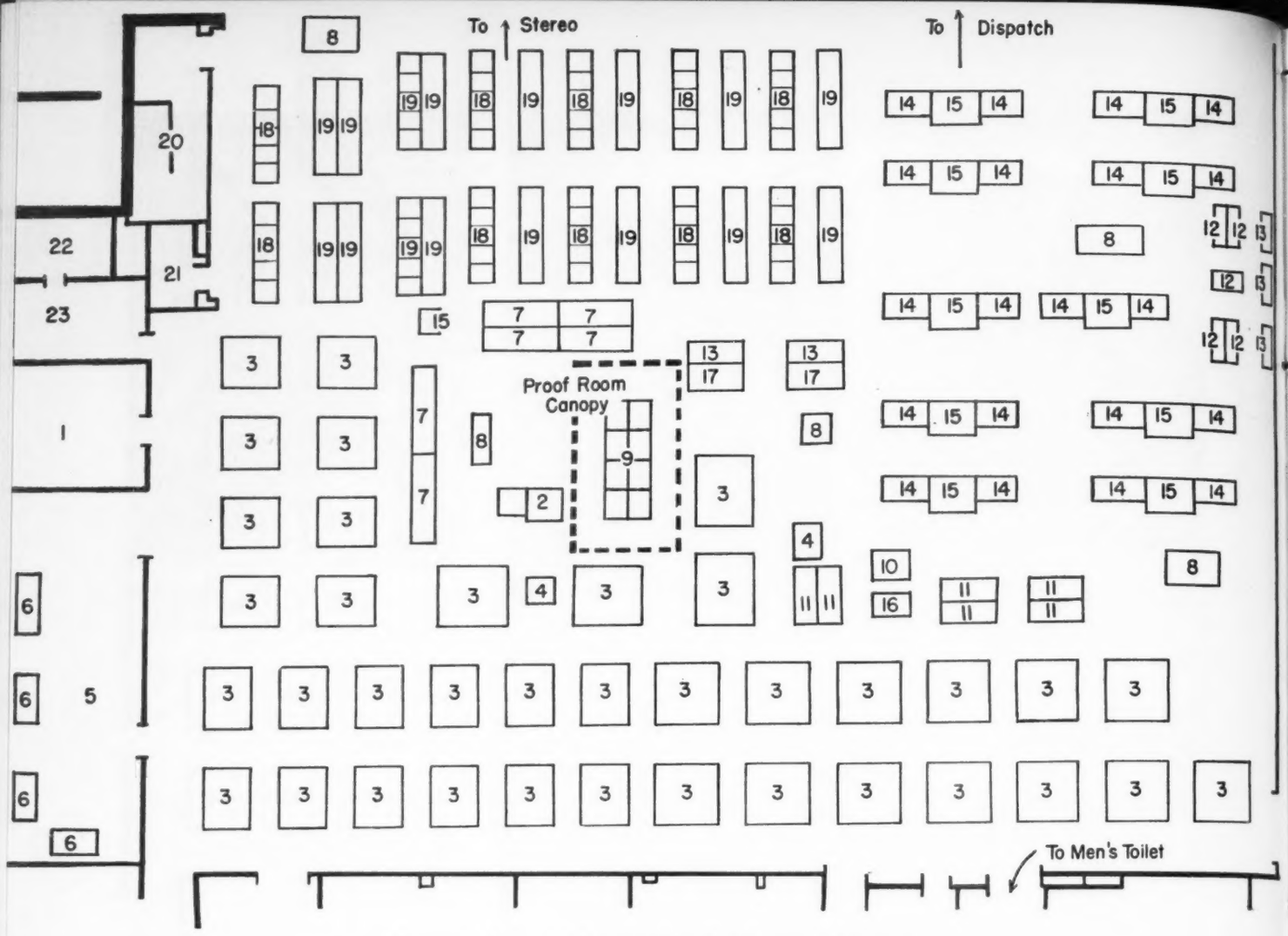
Overhead in the composing room of the Akron *Beacon-Journal* there are 27 small transformers to accommodate the Linotype machines to 208 v power. The machines were originally built to use 220 v power and without the transformers faulty operation would have resulted. The transformers will be disposed of as newer machines built for 208 v power replace the older models. Power distribution in the composing room is by overhead bus duct—which allows flexibility in locating and moving equipment.

Motors on all the linecasting machines and on the composing room saws have separable plugs, making for easy motor replacement.

Photoengraving in Parallel

The *Beacon-Journal* photoengraving room is built in two parallel work lines with right and left hand equipment opposite. The two work lines begin with two Chemco cameras. One is used for combination color and black-and-white work; the other for

Steel shelves at either side of the saw-trimmers and adjacent to ad banks mean partially-used long strips of material need be cleaned up only once or twice a day in the Akron (O.) *Beacon-Journal* ad alley. Often these shorter strips are used during the day rather than thrown immediately into the hell box. In this way no material is wasted.



***Beacon-Journal* Composing Equipment Layout**

1. Composing Room Foreman
2. News Copy Desk
3. Linecasting Machine
4. Reid Magazine Rack
5. Machinists' Room
6. Elrod Machine
7. News Dump
8. Vandercook Proof Press
9. Proofreaders' Desks
10. Ad Foreman
11. Ad Dump
12. Ludlow Matrix Case
13. Ludlow Caster
14. Ad Bank
15. Saw-Trimmer
16. Rouse Band Saw
17. Ad Storage
18. Page Truck
19. Makeup Table
20. Stairway
21. Janitor's Closet
22. Women's Toilet
23. Women's Rest Room

black-and-white work only. There is a dark room behind each camera. Sliding doors allow for passing negatives to two Photo-Mechanix stripping tables. These are backed up by a Robertson printing frame, two dusting tables, two burning-in ovens, one drying oven and a stripped film or print drying board. The latter incorporates an interesting *Beacon-Journal* innovation. The shank end of a plunger switch projects above the center of the film or print drying board. When a plate is laid on the board the plunger is depressed, which in turn switches on a six-coil heating unit and blower fans.

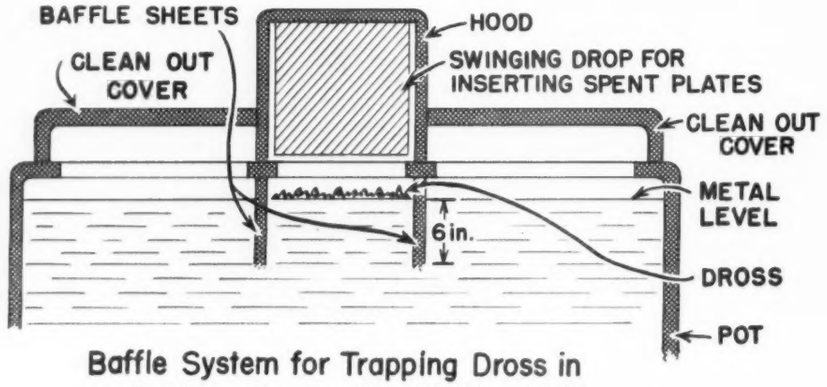
The photoengraving department is air conditioned with a 100% supply system. No air is recirculated, due to possible contamination by nitric acid fumes from the etching room.

The walls in the photoengraving room are of gray tile; floors are acid-proof quarry tile in the etching room and acid-proof asphalt tile in other work areas of this department. Ceilings are painted white.

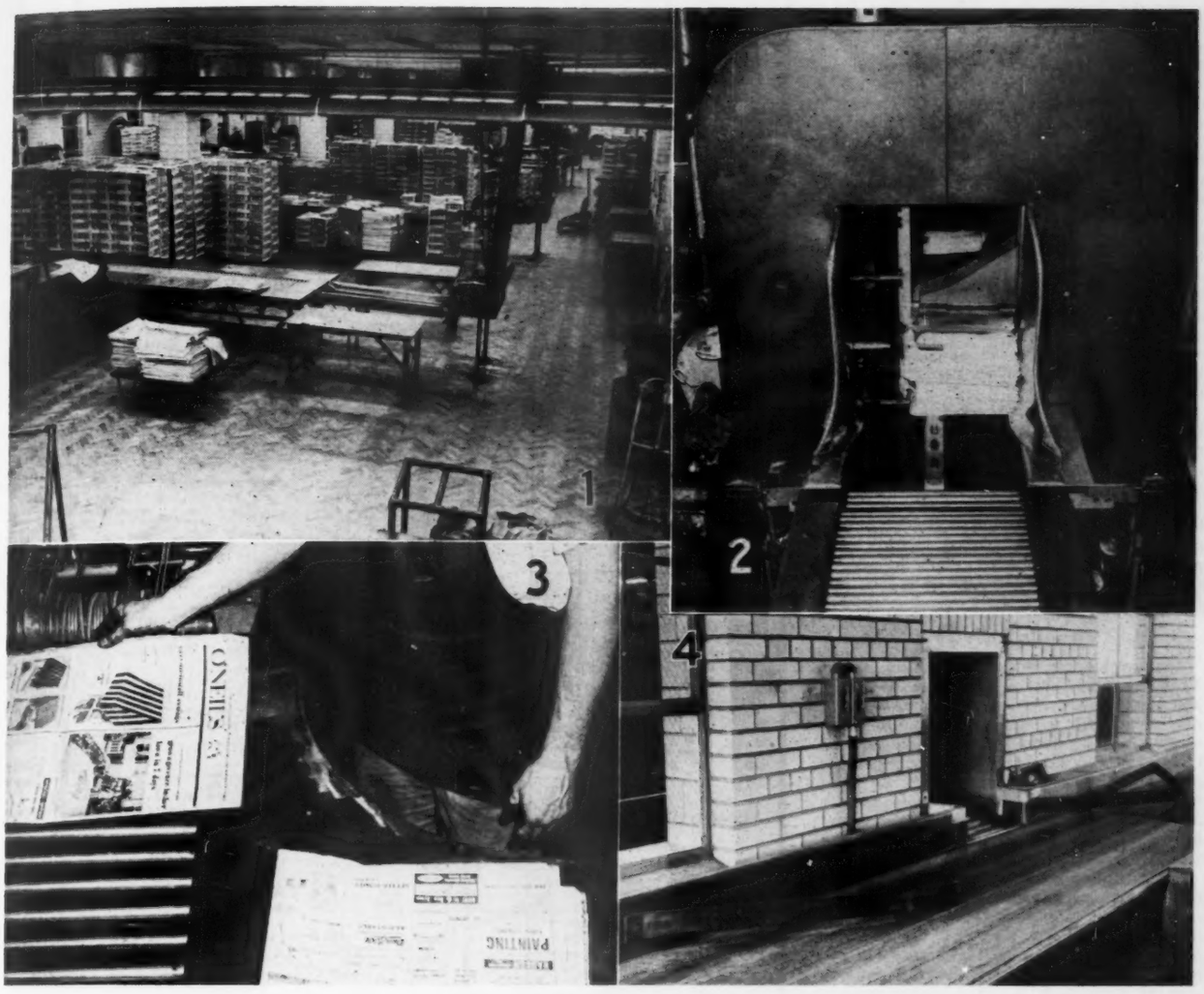
Stereotype Room Layout

Area of the stereotype department went from 2000 sq. ft. in the old building to 5000 sq. ft. in the new. New equipment includes two new Junior Autoplate machines. These were added to two Pony Autoplates operated at the old plant. One of the Pony machines is set up for color mats and the other for double-page mats. The Junior units are connected to a 10 T. Kemp melting pot. The Kemp pot has baffle plates (see the diagram) which hold most of the dross in the center section. This makes it unnecessary to take off the end cover plates and clean those harder-to-reach sections more than once every two or three months. The center section of the pot is cleaned more often.

Two conveyors take finished plates to an



Baffle System for Trapping Dross in 10 T. Kemp Immersion Melting Unit



Views in Mailroom of Akron (O.) *Beacon-Journal*

Mailroom of the Akron (O.) *Beacon-Journal*, looking north. Four conveyor lines feed four Wiretyer Corporation wire tying machines for bundling newspapers. Newspapers are fed in from the pressroom to the right and go out to the loading dock to the left.

Wiretyer Corporation Wire Tying Machines in mailroom bundle newspapers with single or double wire ties as desired. This view is at the feeding end of the machine. Finished bundles come out the other side.

Bottom wrappers for bundles of newspapers can easily be put down on the Jampol conveyors. A semi-circular cut was taken out of the side plate, allowing a man to get much closer to the conveyor without reaching so far. This innovation reduces operator fatigue and, incidentally, results in more wrappers going down straight on the conveyor. This in turn has helped operation of the wire tying machines.

These are the deflectors on either side of the delivery opening from the wire tying machines to the loading platform. The deflectors guide tied bundles of newspapers to the outside of the conveyor belt so they can be picked off easily by the dock men. Eventually, the deflectors will be outmoded as the power takeoff is installed. But they're doing a job now.

automatic plate drop which in turn takes them to the pressroom directly below. Layout in the stereo room is improved by mounting carburetors and pumps for equipment on an overhead platform.

Walls in this department are green tile. Floors are of maple wood blocks set in a herringbone pattern.

Controlling the flow of work through the composing department is the dispatch room. Here is a storage area for keeping mats 60 days. There are three form storage units of 20 page capacity each. Adjacent to the storage area is the remelting room which includes a Dumperin melting pot.

Pressroom Can Be Expanded

The pressroom of the *Beacon-Journal* went from 12 Hoe units and 3 folders to 18 Hoe color convertible units and 4 folders in the new building. There is room available for 21 more press units and 4 more folders (see the floor plan). The *Beacon-Journal* press units have underfolder leads allowing wide choice of units for page 1 plates. This versatility is becoming more important all the time as the *Journal* presently averages use of color four days out of seven.

Centralized control of the press units was installed by General Electric Co. in a remote position in the old building. Thirty-six exhaust registers help pull off stale air and ink mist. The fresh air supply grilles are located slightly above headroom height on the press platform in order to supply air at proper level.

Standard slotted fluorescent lamp reflectors result in less maintenance in the pressroom. The old lamps had solid reflectors and required cleaning once a day. The slotted reflectors need not be cleaned more than once a month because of air-ink mist movement upwardly through the slots.

For newsprint handling, the *Beacon-Journal* operates three Lewis-Shepherd electric trucks. One with a clamp attachment in the main building and pressroom; one with a scoop attachment in the main building; and one with a clamp attachment in the train terminal across the street.

The pressroom is kept at 50% to 55% relative humidity and about 75 deg. temperature at all times. Walls are cream tile. Floors are concrete and Algrip around the work areas including catwalk surfacing on the presses. Ceilings are painted white.

Mailroom Up to-date

The *Beacon-Journal* mailroom was completely modernized in the new plant. Hand tying of bundles was practically eliminated

except for a few papers which must be mailed in a round wrapper. Area of the mailroom went from 3600 sq. ft. in the old building to 11,400 sq. ft. in the new one. The mailroom layout is so arranged that additional equipment can be installed when more press units are added in the future. New equipment includes four Jampol conveyor deliveries and four Wiretyer Corporation wire tying machines, which make single or double ties on bundles. The four conveyor lines are spaced far enough apart so that equipment such as the Cutler-Hammer stacker could be accommodated when it becomes commercially available. With a removable section in each conveyor and extra powered crossover conveyors, the papers from any press and folder can be sent to any wire tying machine. In case of breakdown, the changeover can be effected in 5 min.

The wire tying machines use 17 gauge mill-run wire. Bundles from the wire tying machines are automatically fed onto an 18 in. wide inclined belt conveyor which takes the tied bundles out to the loading dock. Double swingable curtains in each of the four openings to the loading dock keep the cold air out in the wintertime. This is important since cold air affects efficient operation of the wire tying machines, as well as human comfort.

Versatile Delivery

On the loading dock four sections of a 30 in. wide conveyor take bundles to portable skate conveyors where a man is employed at each to stack the bundles into trucks. All four sections of the loading dock conveyor are reversible so that the bundles from any wire tying machine can be delivered anywhere along the 200 ft. dock. Eventually there will be power takeoffs from the loading dock conveyor and telescoping conveyors into the trucks.

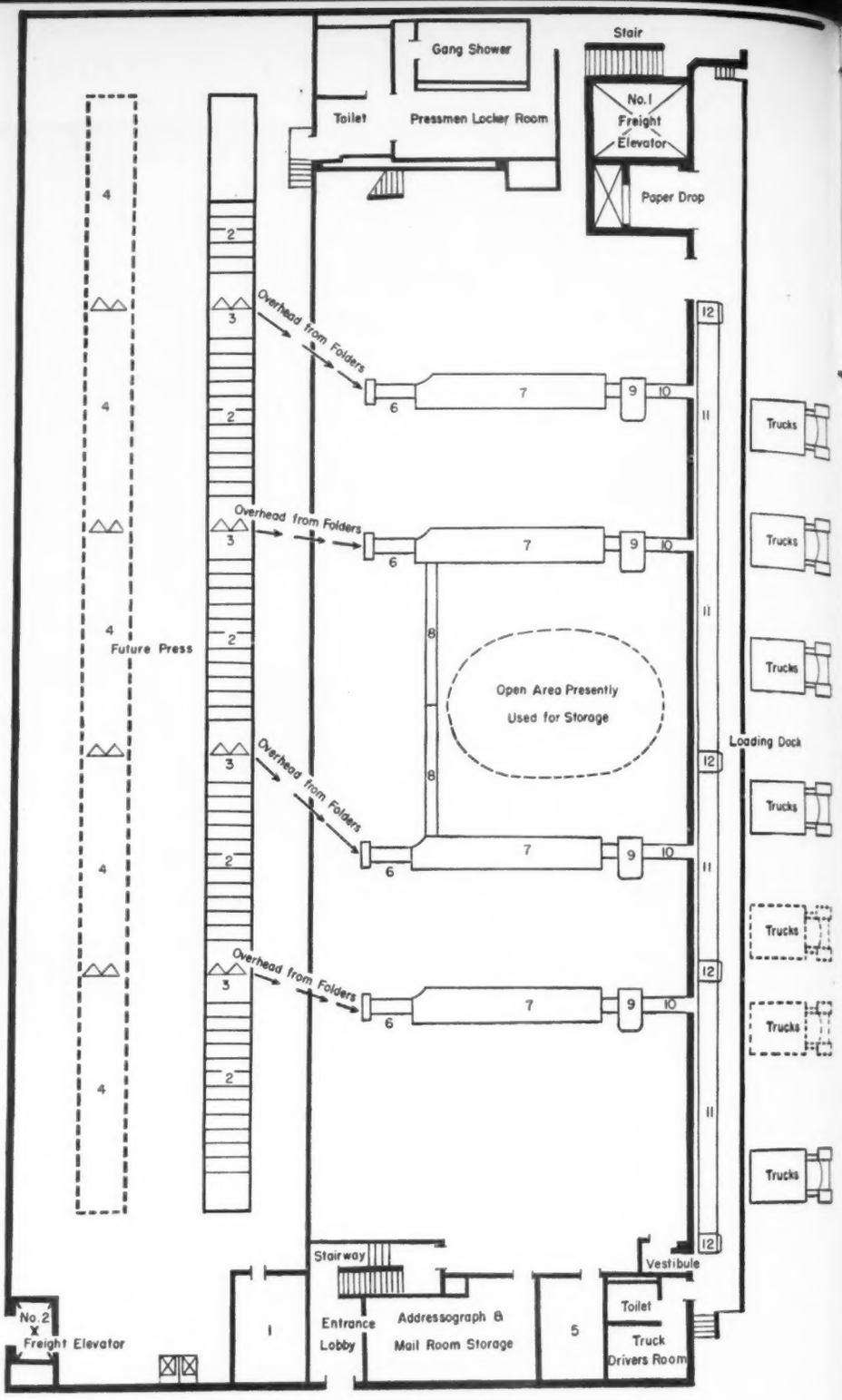
With three presses running, a truck load of papers pulls away from the *Beacon-Journal* dock every 3 min. Or, put another way, one folder-conveyor-line and loader can load a truck in 12 min. The Cutler-Hammer press delivery folders kick out papers starting in units of 10 and in increments of 5 up to 50. Thus all bundles are kept to a weight of 40 to 45 lbs.

The walls of the mailroom are cream tile; ceilings are painted a light tan; floors are the maple wood block set in a herringbone pattern.

Room for Plant Growth

A distinguishing feature of the *Beacon-Journal* plant is the ample room for growth. This is the result of the policy set by Jack Knight of the Knight Newspapers. He said: "I don't want anyone in Akron to tell me he needs more room for a long time to come."

"I don't believe anyone will in my generation," says Jim Curry with a smile.



***Beacon-Journal* Press and Mail Equipment Layout**

1. Pressroom Foreman
2. Press Unit
3. Folder
4. Future Press Unit
5. Mailroom Foreman
6. Drops to Cutler-Hammer Conveyors
7. Jampol Roller Feeder Conveyor
8. Crossover Conveyor
9. Wiretyer Corporation Wire Tying Machine
10. Inclined Belt Conveyor
11. Loading Dock Conveyor
12. Loading Dock Conveyor Motor

Phototypesetting Use Is Expanded for Ads

With the recent installation of a second Intertype Fotosetter photographic typesetting machine, the St. Petersburg (Fla.) *Times* announced full scale display production in phototypesetting. The *Times* initiated phototypesetting production techniques in February 1954. In August, two Dow-ANPA Fast Etch engraving machines were added to engrave the pasted up layouts.

Original installation was planned by Alvan H. Chapman, jr., *Times* general manager, and *Times* Editor Nelson Poynter. The expansion is in line with the original planning. Chapman stated the process is being used primarily in producing difficult types of ads.

The *Times* phototypesetting department is operated two shifts six days a week and is directed by Cal Thomas, manager of the Art, Dispatch and Engraving Depts. Department personnel includes five Fotosetter operators, six paste up artists, and two darkroom technicians.

Graphic Arts Equipment and Supplies

Literature for the Asking

Keep Yourself Informed. The folders and bulletins listed below all pertain to modern equipment, supplies, processes and/or methods. These have been prepared especially for plant managers, superintendents and foremen. Please ask for the pieces selected by number and send your request to Literature Dept., *Printing Equipment Engineer*, 1276 West Third St., Cleveland 13, Ohio.

Composing Room

METAL FEEDER

Instructions for installing a single-pig metal feeder on Intertype linecasting machines are given in a four page 4 in. by 8 in. bulletin issued by Intertype Corporation. Parts of the feeder device are identified in a numbered illustration. Details for installation are complete. Please mention PEE No. 295L when requesting a copy.

MATRIX REPAIR TOOL FOLDER

Usage and advantages of the Star Matrix Repair Tool are described in Linotype Parts Co., Inc.'s four-page folder. A line drawing identifies the various components of the item. Reading material in the folder includes a section on *How It Works*. Please mention PEE No. 296L when requesting a copy.

PORTFOLIO OF TYPE USES

Bauer Alphabets, Inc., has gathered a portfolio of specimens showing how almost 50 type faces have been used in specific advertisements. Bauer's Horizon, Legend, Venus, Futura, Stradavarius and others are illustrated. The utilities of hand types are described in an insert in the portfolio. Please mention PEE No. 297L when requesting a copy.

Platemaking

KODAK GRAPHIC ARTS BOOK

A new Eastman Kodak Co. data book, *Color Separation from Reflection Copy,* contains information on the photomechanical reproduction of color copy which must be photographed by reflected light. That includes making color separations from oil and water color paintings, dye transfer and other photographic color prints, fabric swatches, and pastels. Copies of the 48 page book may be purchased from Kodak Graphic Arts dealers for 75c each.

PLATE GUMS LISTED

Descriptions of seven flexographic plate gums as well as general information on the selection of such gums are contained in three looseleaf pages made available by the Ideal Roller & Mfg. Co. Included is a presentation on *What Specific Gravity Means to You* in the selection and use of flexographic plate gums. Please mention PEE No. 298L when requesting a copy.

PHOTOGRAPHIC FILM BASE

A 12 page technical data booklet on E. I. du Pont de Nemours & Co.'s new Cronar polyester photographic film base sensitized with Photolith emulsion has been released by the company's Photo Products Department. The booklet includes charts and graphs which will enable the user to determine the performance of the litho-sensitized Cronar base under particular shop conditions. For a copy, please mention PEE No. 313L in your request.

PLATE CUTTING AND TRIMMING

The Monomelt Co., Inc. recently released a two page leaflet descriptive of Monomelt Power Shears for cutting and trimming lead, copper, zinc and plastic electrotype and stereotype casts, halftones and plates. Sponsor claims no burrs, whirling saws and flying metal chips with Power Shears. For a copy, please mention PEE No. 319L in your request.

SIMPLE PHOTOCOMPOSING MACHINE

An eight page, double fold bulletin was released by the Ralph C. Coxhead Corp. containing examples of type faces and descriptive material on the Coxhead-Liner for photocomposing display type. The Cox-Head Liner automatically develops, fixes and delivers finished prints ready for paste up. Composition is by dialing to the desired character. For a copy, please mention PEE No. 320L in your request.

MOUNTING PRESSES

Seal, Incorporated recently released a two page leaflet in which is described three models of flush mounting presses for mounting engravings or electrotypes. Prices and specifications are contained in the two color leaflet. Size of the heating platen varies from 8½ in. by 11½ in. to 13½ in. by 23 in. For a copy, please mention PEE No. 324L in your request.

Pressroom

CUTTING PRESS MAKEREADY COSTS

Cut Our Makeready Cost 20% to 30%, Says Ohio Printer, is the title of a case history of a user's experience with Vandercook & Sons, Inc. Lite-Base. The article is well illustrated and is of absorbing interest to letterpress printers. For a copy please mention PEE No. 299L in your request.

MODEL D SPEED-FLEX PRESS

A description of the Model D Speed-Flex Press is contained in a two page bulletin issued by Orville Dutro & Son, Inc. Operations performed on the press and general specifications are listed. The letterhead size bulletin is printed in two colors. Please mention PEE No. 300L when requesting a copy.

BOXBOARD ROTARY LETTERPRESS

Letterhead size four page folder, well illustrated, is descriptive of the Cottrell five color rotary letterpress for boxboard printing. Included is a printed, creased and die cut carton all ready for folding. Press specifications are presented together with detail pictures of the press. Please mention PEE No. 301L when requesting a copy.

PRESET-SPEED PRESS DRIVES

In an eight page letterhead size, illustrated bulletin, General Electric Co. explains functions and utility of AC Preset-Speed Press Drives for application to commercial printing presses, folders, gatherers and collators. A selector chart for a variety of applications is shown. Ratings of equipment are up to 15 h.p. Please mention PEE No. 302L in your request.

MIEHLE BULLETIN

Miehle Printing Press & Mfg. Co.'s Offset Star Series of presses is described in a six-page, four-color bulletin. The series of presses is treated in three size groups—the Miehle 29 and 36 offsets, the 61 and 76 offsets and the 41 and 49 offsets. Sheet sizes, speeds and features of each press are outlined. Please mention PEE No. 303L when requesting a copy.

HEIDELBERG QUOTATION FOLDER

A quotation folder, containing detailed information on the new Original Heidelberg 10 in. by 13 in. platen press, has just been prepared by Heidelberg Eastern, Inc. The folder contains pictures of such features as the rotary gripper system, automatic washup, impression control, two-up attachment, hairline register, and the deep 14 in. feed and delivery piles. Included also are full specifications on the inking apparatus. Please mention PEE No. 304L when requesting a copy.

FLEXOGRAPHIC PRINTING INK BOOKLET

A colorful 16-page booklet on flexographic printing inks has been produced by Bensing Bros. & Deeney. Words and pictures are used to describe the company's background, its research, quality control, manufacturing and service facilities. A directory of the firm's 14 different standard flexographic inks, showing which ink should be used to print the commonly used materials, also is contained in the booklet. Please mention PEE No. 305L when requesting a copy.

OFFSET PAPER

A four page bulletin beautifully illustrates the use of four color offset on Ticonderoga Offset paper manufactured by International Paper Co., Fine Paper and Bleached Board Div. A list of distributors is included on the last page. For a copy, please mention PEE No. 322L in your request.

SAMPLE BOOKLET ON PAPERS

The Glassine & Greaseproof Mfg. Assoc. has compiled a sample book illustrating some of the more popular types of

(*Continued on Next Page*)

Literature Request Coupon

After you have selected the literature described in these pages which you would like to have sent to you, please jot down the identification numbers on this coupon and mail to

PRINTING EQUIPMENT *Engineer*
1276 West Third St., Cleveland 13, Ohio

Literature Number(s) _____

_____

Your Name and Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

Glassine and Greaseproof papers currently in use. Twenty different samples are included in the booklet, each sample showing variations in basis weight, color, transparency, finish, etc. For a copy, please mention PEE No. 315L in your request.

OFFSET INK CATALOG

Pope & Gray, Inc. recently released its Offset Ink Catalog illustrating standards of its Quickset Offset inks. Each color has been lithographed on offset and coated paper to demonstrate the results on both kinds of stock. Beside regular inks, Pope & Gray has included one page showing Hi-Gloss Offset Process inks. In a comprehensive flyleaf are listed the light fastness and opacity characteristics of the inks, and perforated number tabs aid in using the booklet for color matching. For a copy please mention PEE No. 316L in your request.

OFFSET PRESS PUBLICATIONS

American Type Founders, Inc. recently released two illustrated four color publications covering its Chief 20 and Chief 22 Offset Presses. Each of these 8 page publications covers complete information on the presses involved, including advantages for various types of operations, press specifications, operating features and space requirements. For copies, please mention PEE No. 314L in your request.

Bindery

AUTOMATIC PAPER CUTTERS

Chandler & Price's 39 in., 44 in. and 50 in. Automatic Paper Cutters are illustrated and described in a six page letterhead size bulletin. Features and specifications for each size machine are presented. Please mention PEE No. 306L in your request.

CUTTING AND BINDERY EQUIPMENT

Lawson cutting machines and bindery equipment are described in a two color folder released by the E. P. Lawson Co. Some of the machines illustrated and described are the Lawson 39 in. Automatic Clamp Cutter, the Lawson Electronic Spacer, the Lawson Multiple Head Drill and the Lawson Automatic 3-Knife Rapid Trimmer. Also included in the literature are the various cutting machinery and bindery equipment rebuilt by Lawson. For a copy, please mention PEE No. 321L in your request.

Miscellaneous

MOISTURE QUANTITY INDICATOR

A paper Hygroscope for measuring the quantity of moisture present in paper, relative humidity of pressroom atmosphere and the relation of one to the other is fully described and illustrated in a four page bulletin produced by Cambridge Instrument Co., Inc. Scale is equipped with a range of 20-0-20 percent relative humidity. For a copy, please mention PEE No. 307L in your request.

REPORT ON RESEARCH

A summary of 10 years of sponsored industrial research has been issued by Bjorksten Research Laboratories, Madison, Wis. Included in the report is a list of Bjorksten Lab's contributions to the Graphic Arts industry as well as plastics, electrochemistry, metallurgy, biochemistry, fuels and propellants, and other fields. In the Graphic Arts, Bjorksten Labs have been successful in the development of base sheets and of map reproduction methods. Considerable work has also been done on printing inks for plastics or plastic coatings, on printing vinyl film, and on detackifying polyethylene film. Further work has been done on special resins, particularly for silk-screening operations. Please mention PEE No. 308L when requesting a copy on your letterhead.

MEAD BOOKLET ON LIGNIN

A 14-page booklet, *Meadol, A Lignin From Hardwood*, has been published by the Mead Corporation. The booklet contains an outline of the properties and industrial applications of the alkali hardwood lignin, and chemical modifications of this lignin. Applications include use in the hardboard, ink, and rubber industries. Please mention PEE No. 309L when requesting a copy.

AUTOMATIC MAILING FOLDER

Comparing manual with mechanical inserting and mailing costs is the purpose of Inserting & Mailing Machine Co.'s folder, *How Small Can a Mailer Be To Profit by Mechanization?* The Blue Cross Hospital Service of Kansas City, Mo., was the 17,365-piece-a-month mailer used as a case history to illustrate the folder. Please mention PEE No. 310L when requesting a copy.

NEW WATERPROOF PAPER SAMPLES

Test samples of Aquapello waterproof paper for outdoor signs and posters are offered by Display Products Division, Hobart Paper Co. The paper is beater impregnated and treated with a waterproofing additive which eliminates the need for varnishing before or after printing, says the sponsor. Please mention PEE No. 311L when requesting a sample.

FOSTER EQUIPMENT CATALOG

Many items designed for use in offset and in letterpress plants are listed and described in Foster Mfg. Co.'s 16 page, well-illustrated catalog. Among the equipment outlined in the catalog are offset plate racks and magazine cleaning racks. Size of the catalog is $8\frac{1}{4}$ in. by $10\frac{3}{4}$ in. Please mention PEE No. 312L when requesting a copy.

CARBIDE CUTTING TOOLS

North American Products Corp. has made available a 12 page, illustrated reprint from *Wood Working Digest*, entitled *Keys to Carbide Economy*, by Arthur Segal. In the article are contained sections on carbide tool design, applications, maintenance, care, and retipping and grinding information. For a copy, please mention PEE No. 317L in your request.

OVERHEAD CONVEYORS

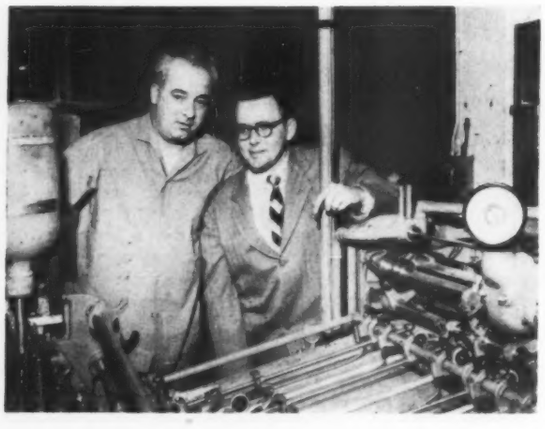
A new line of trolleys for overhead conveyors is described in a 20 page booklet published by Link-Belt Co. Included in the two color booklet are description and dimension data on the entire line, application data, and description of the commonly used attachments. Book No. 2536 contains many illustrations and simple diagrammatic drawings which are explanatory of operation. For a copy, please mention PEE No. 318L in your request.

NEWSPAPER MAILING

Cheshire Automatic Newspaper Labeling Machines, operating speeds up to 16,000 per hr., are illustrated and described in a four page three color bulletin released by Cheshire Mailing Machines, Inc. Specifications and general information are included in the bulletin. For a copy, please mention PEE No. 323L in your request.

PUBLICATION ADDRESSING

Elliott Stencil and Elliott Addressing Machines are illustrated and described in a four page bulletin prepared by Elliott Addressing Machine Co. Some of the machines described are the dick strip imprinter, direct margin imprinter and the subscription fulfillment and circulation analysis dick strip addressing machine. For a copy, please mention PEE No. 325L in your request.



First Miehle Offset—Baron-Kahn Press, Inc., letterpress printers in New York, N. Y., recently completed the installation of its first offset press, a Miehle No. 29. Shown inspecting the new press are (left) H. Baronfeld and Ed Hartt, Miehle representative.

New York Printers Celebrate Anniversaries

More than 1000 New York printing industry executives honored Don H. Taylor, president of the New York Employing Printers Assoc., at the recent annual dinner meeting of the association at the Commodore Hotel in New York, N. Y. The dinner marked 25 years of outstanding service by Don Taylor to the printing industry and also celebrated the 90th anniversary of the founding of the association.

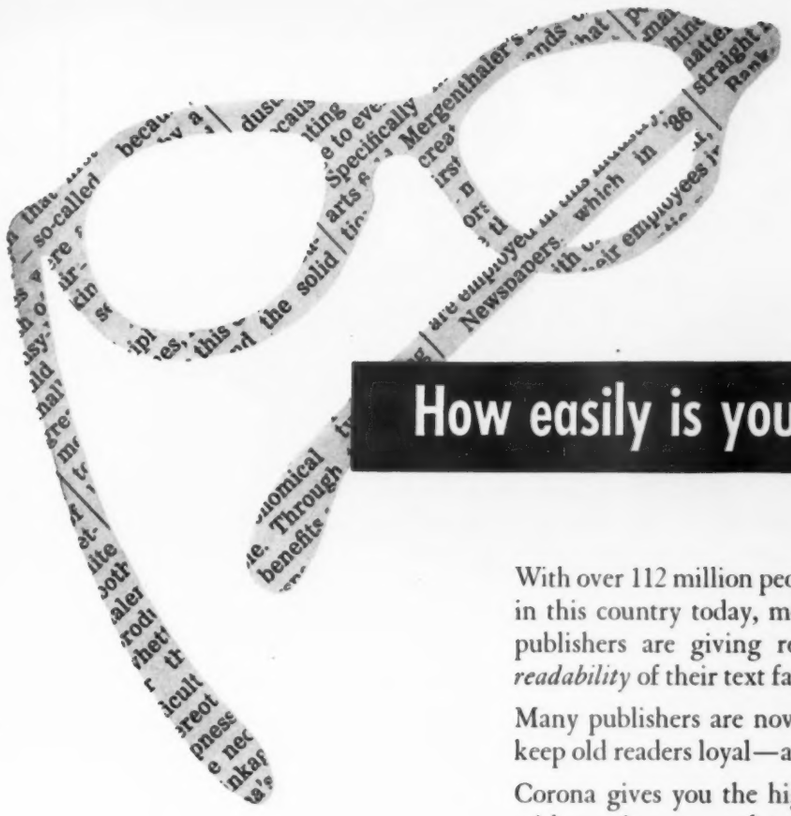
Election of new officers was the only business of the meeting. The officers elected are: F. N. Ehrenberg, president of Blanchard Press, Inc., chairman of the board; Donald B. Thrush, president of Thrush Press, Inc., secretary; and Samuel Chermoble, president of Comet Press, Inc., treasurer. Fourteen new directors were also elected.

Don H. Taylor, president of the New York Employing Printers Assoc., was honored for 25 years of service to the printing industry.

Don H. Taylor joined the association in 1930 as assistant secretary of its Printers League Section which handled union-shop labor relations. In 1933, he became secretary of the section. In 1935 he was named executive vice president and in 1954 his title was changed to president. While in the trade association field, Taylor is best known for efficient general trade association management, to the public, he is identified with his contributions in the field of collective bargaining.

The New York Employing Printers Assoc. had its greatest growth during Don Taylor's service. When he joined the association during the depression, it had 397 members and could claim only that the New York printing industry was producing almost $200 million a year worth of printing. Today, without including newspapers, the New York printing industry produces well over $750 million of products annually and is the second largest manufacturing industry, employing 70,000 workers. The association now comprises 843 out of the approx. 1000 commercial printing companies in the New York area and has an annual budget of more than $500 thousand a year.

The New York Employing Printers Assoc., under Taylor's leadership, has become known for the management services it provides its members. To provide services, the association has a full time staff of 52, including 11 accountants and cost accountants, five engineering technicians, five labor and collective bargaining specialists and others assigned to education and training, credits and collections, government and public relations and other fields.



How easily is your paper read?

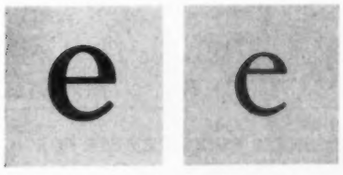
With over 112 million people lacking perfect vision in this country today, more and more newspaper publishers are giving renewed attention to the *readability* of their text faces.

Many publishers are now using a 9 point type to keep old readers loyal—and gain new readers.

Corona gives you the highest possible readability with maximum word count. Being designed with your reader's vision and your newsprint limitations in mind, it looks as big as other faces a full point larger, yet has the alphabet length of smaller faces.

And if you want to save newsprint by using narrower columns, your best choice for the optimum legibility in 8- or 7½-point is still

corona



Type must be designed for the purpose it is to serve. A good newspaper type differs from a good book type because the legibility problem differs. Here the Corona "e" is compared with the same point size Granjon "e" (both greatly enlarged). In Corona thin lines are thickened, and thick lines are thinned for even color on newsprint. The counter of the "e" is opened and the tail shortened to avoid ink traps. Note that Corona is also bigger.

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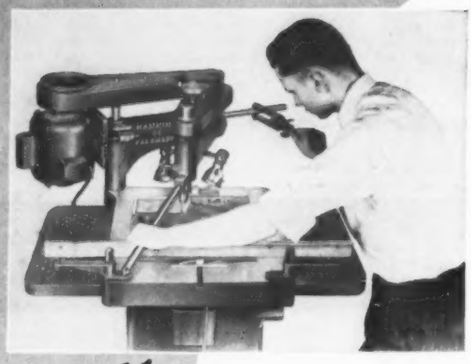
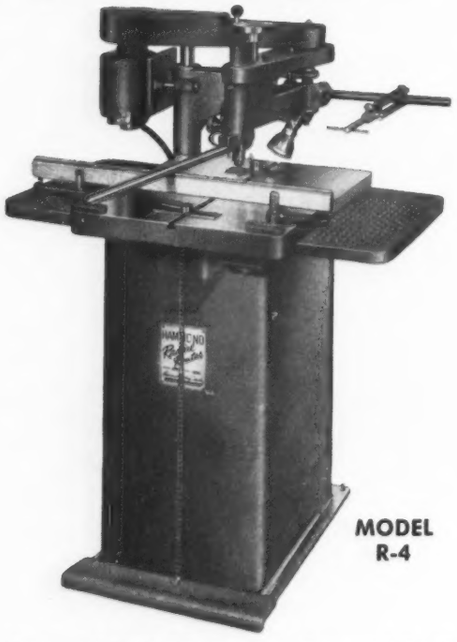


Hammond
Radial Router



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Patents

For The GRAPHIC ARTS

Covering patents issued Apr. 5, 12, 19 and 26.

All new patents for the Graphic Arts are reported exclusively for *Printing Equipment Engineer* by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. *Printing Equipment Engineer* is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

PAPER TRIMMING MACHINE

A set of sheets can be held together by a clip or clamp and fed to this machine so that two or all four corners may be rounded to prepare the sheets for use in bound book form. The machine can be adjusted to handle many different book sizes and to cut two or four corners simultaneously. Patent 2,705,533 by Elmer C. Sasse and John W. Eaton.

•

Composing Room Equipment:

TYPOGRAPHICAL CASTING MACHINES

The mechanical and electrical controls of a dual pump stop for typographical casting machines are so related one to another that the electrical control is automatically disabled when the machine is conditioned for regular operation, as when line justification is required. Patent 2,706,553 by Louis Rosetto, assigned to Mergenthaler Linotype Co.

•

Platemaking:

UNDERCUTTING UNIT FOR PRINTING PLATE

The unit is for machining beveled clamping grooves at the ends of curved stereotype, electrotype printing plates, or the like, and may be driven from the conventional cut-off milling device of stereotype platemaking machinery. Patent 2,706,325 by William F. Begley.

METHOD FOR REGISTERING AND SOLDERING DOUBLE PAGE ELECTROTYPE

To form a unitary printing surface, the method provides steps whereby the securing operation may be effected so as to avoid interfering with the printed image formed by the double page printing surface and so as to effectively register the single page electrotypes prior to and during securing operation. Patent 2,706,946 by Harry W. Faeber, assigned to Time, Incorporated.

PRINTING PLATES

Invention provides a relief printing plate having the dimensions of stereotype plates in general use but with improved characteristics of clearness and durability and having mechanical advantages in withstanding centrifugal and other forces tending to cause deformation of a plate during printing. Patent 2,706,947 by Alexander J. Albrecht, assigned to R. Hoe & Co., Inc.

•

Feeding, Folding, Delivery:

PIVOTALLY MOUNTED BUCKLE CHUTE FOR SHEET FOLDING MACHINE

A feature of the invention is the complete mechanical dissociation of buckle stops and buckle chutes, so that when retraction of the chutes is effected, the chutes move relative to and away from the stops, thus permitting rapid adjustment of the chutes when a sheet folding jam occurs. Patent 2,706,115 by Francis J. Rouan and John William Bach, assigned to Pitney-Bowes, Inc.

DELIVERY MECHANISMS FOR PRINTING MACHINES

An improved slow speed delivery mechanism has been developed for use with modern high speed printing machines of the type used to print newspapers, magazines, etc. The application for this patent is a division of that originally filed for patent 2,659,437. Patent 2,706,628 by William F. Huck, assigned to Huck Company.

TENSION DISTRIBUTING ROLLER

In controlling the tension of a web of paper being unwound and fed to a printing press, a pair of counterweighted arms are used to cant a roller which contacts the running web. Patent 2,707,083 by John B. Kohler.

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PATENT SEARCHES

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Printing Presses:

CLEANING PLATEN PRESS INK ROLLERS

A built-in washing arrangement cleans all the inking rollers while press is still running. There is a wiper for the rolls and a collecting chamber for used washing fluid, the chamber being removable for disposing of the wash waters. Patent 2,705,455 by Artur Max Buttner, assigned to Schnellpressenfabrik Aktiengesellschaft Heidelberg.

MULTI-COLOR SHEET PRINTING MACHINE

In tandem-arranged printing units, the individual units are more easily controlled by providing each unit with both an auxiliary drive and a coupling device which, if the main drive is uncoupled, connects the respective printing machine to its auxiliary drive and stops its transporting chain for the sheet movement. Patent 2,705,918 by Werner Koch, assigned to Faber & Schleicher Aktiengesellschaft.

PRINTING CYLINDER WORK SUPPORT

To prevent the endless felt blanket supported by three spaced rollers, used in multi-color printing work, from wrinkling and creeping, a bracket rotatably supports the rollers at one end in such a manner that one roller is vertically adjustable and all three rollers are horisontally adjustable. Patent 2,706,449 by Frank Lembo.

HOLDER FOR SHEET DRYING APPARATUS

In silk screen printing processes, the sheet drying apparatus is provided with sheet handling devices or wickets which receive the freshly printed sheets in a manner to prevent entanglement and spoilage. Patent 2,706,552 by John Key.

•

Miscellaneous:

PICK TESTER

Paper to be printed is pick tested by subjecting a sample to constant pressure printing with an ink of constant tack and temperature. Speed of printing is accelerated for successive areas of sample, and speed of first area to show evidence of pick is an index of pick characteristic of the paper. Patent 2,705,424 by Anthony W. Pomper, assigned to John Waldron Corp.

APPARATUS FOR LIFTING AND TRANSPORTING CYLINDRICAL ARTICLES

The apparatus is constructed so that it can be operated to pick up, tilt and transport one or two pairs of heavy newsprint rolls having different diameters, the rolls being in end-to-end relation. Patent 2,706,060 by John J. Ferrario and Joseph Dondero.

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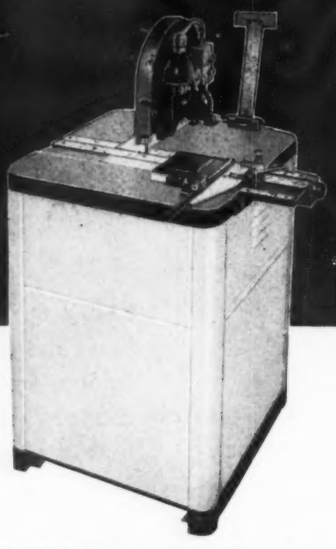

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TAGA Meeting

(Continued from Page 25)

Graininess in Litho Prints

Another area offering resistance to quantitive investigation was discussed in the talk, *Graininess in Lithographic Prints*, by George W. Jorgenson, Lithographic Technical Foundation.

Jorgenson said that as studies of image quality were progressing at LTF, the importance of graininess as a factor in the quality of printing became increasingly evident. When, for example, making visual comparisons between press sheets for such factors as tone and color reproduction or sharpness, if one sheet had a different degree or type of graininess, it influenced LTF's judgment in comparing the other quality factors.

Graininess is the appearance of roughness in what should be smooth tones on the printed sheet. It also applies to irregular patterns which are random from dot to dot: no fixed or repeating pattern in the irregularities from one dot to the next. The term, graininess, often is loosely used to describe many other defects in lithography.

Graininess is caused by the presence of extremely small grains in the image. Grains of two general types: black grain—unwanted ink in non-image areas, and white grain—small specks in image areas where the ink has not covered the paper, or uneven light reflection from the ink film.

Lithographic grain has a similar visual effect but is physically different from photographic grain. A lithographic image is composed of a regular or ordered pattern of halftone dots.

Observations about lithographic grain based on examination of various press sheets included: 1. To be detected, the grains must contrast with their background. 2. The minimum size of the grains seems to be about 0.0005 of an inch in diameter. 3. The kind, size, frequency and location of the grains is generally determined by the cause of the grain.

With all these quantitive measures, Jorgenson reminded, graininess is a mental impression and as such cannot be directly measured by purely physical means.

Study Ink Transfer

A whole group of talks were delivered at the TAGA conference on the general subject of ink transfer to paper.

Two of the papers were presented by Jacqueline M. Fetsko and William C. Walker, National Printing Ink Research Institute, Lehigh University, Bethlehem, Pa. One of the papers, titled *Measurements of Ink Transfer in the Printing of Coated Papers*, gave the results of using reproducible laboratory techniques in studying effects of printing pressure, printing speed, and ink film thickness with three oil-based inks on four different coated papers.

Experiments showed these results:

1. The percentage of ink transfer was highly dependent on the amount of ink carried on the plate. As the ink film thickness on the plate increased, the per cent of transfer increased very sharply at first, reached a maximum, and decreased again to approach a constant value.
2. Increased printing pressure caused an increase in ink transfer and also a decrease in the minimum amount of ink required for full coverage.
3. Slower printing speeds also increased ink transfer and decreased the minimum practical ink film thickness.
4. Per cent ink transfer generally varied little among the four coated papers investigated at the Institute. However, higher per cent transfer in the thick ink film region and the minimum practical ink film thickness occurred at lower ink film thicknesses for smoother papers.
5. Ink transfer of the six black inks studied increased as vehicle viscosity decreased. More ink was required for full coverage with the ink which had a high pigment loading in a thin vehicle. No marked difference in coverage was noted with the other inks.
6. Mottling was dependent on the ink-paper-press combination and was associated with low penetration of the ink into the paper, high ink film thicknesses, and high printing pressures.

A Curve and An Equation

A second talk by Fetsko and Walker concerned *A Concept of Ink Transfer in Printing*. This report revealed that recent investigation of ink transfer under various conditions showed that percentage of ink transfer when plotted graphically against ink carried on the plate produces a curve with characteristic shape.

Further intense study brought out a derived equation which fits the transfer data. This equation has three constants related to the vital printing properties of ink and paper. This approach provides a way of measuring these properties and determining their dependence on the speed, pressure, ink film thickness, and other printing variables.

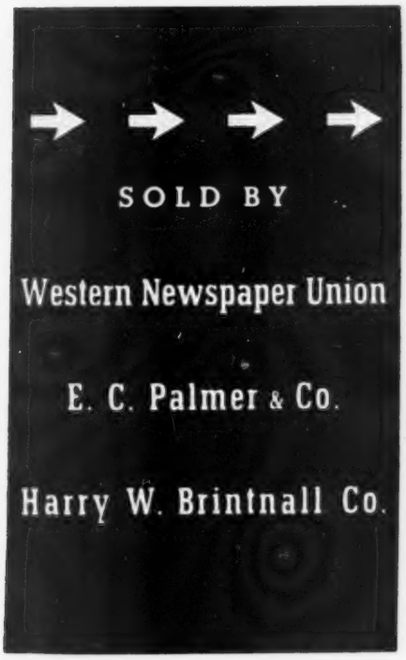
Forces in Printing

Results of other study on ink transfer were presented by Charles H. Borchers, Lithographic Technical Foundation, in his talk, *Studies of Ink Transfer During Printing*.

In considering the forces that ink and paper are subjected to on the offset press, he said, we must begin with the paper as it passes between the blanket and impression cylinders. There is a build-up of pressure at that time, causing compression of the ink, paper, and blanket. After the paper has passed between the blanket and impression cylinders, there is a release of the compression forces. Finally, tension forces are developed in the paper, ink, and blanket as the grippers pull the paper from the blanket. The forces of the press exerted on the ink and the paper determine how the ink and the paper will react.

In a further talk, "The Measurement of the Drying of Letterpress and Lithographic Inks on Coated Book Papers," Norman J. Beckman, Kimberly-Clark Corp., described the conditions of his experiments. "It is found," he said, "that a very broad range in drying time results when a given paper is printed with several inks of the same general type under the same conditions."

"The thickness of the printing film has a critical effect on the observed drying time,"



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he continued. Results of experiments included in his talk demonstrated the influence of temperature, relative humidity, paper moisture content, and offset press fountain solution as further factors on the ink drying behavior of given paper and ink combinations.

Use of LTF Inkometer

R. V. Shalvoy, Stecher-Traung Lithograph Corp., cited examples of problems, such as paper picking, poor trapping and fill-in around the halftone areas or small reverse lettering, which can be reduced through proper ink formulation. One way to obtain proper formulation in a positive, repeatable manner is through the use of the LTF Inkometer, he said in his talk, *Use of the LTF Inkometer in Printing Plants.*

An example, cited by Shalvoy, of the type of difficulty which can be solved through use of the Inkometer was a job on a label sheet of moderate ink coverage on a 4-color press and coated paper. Sequence of colors was yellow, medium blue, red, and dark blue. It was known in advance that the paper to be used would be a weaker sheet; more prone to picking and splitting than a regular coated sheet. However, standard label inks were used to see if the paper would pick. After a few hundred sheets it became apparent that it would. The coating was picking off and some of the sheets were splitting. Each of the four colors were cut with 4 ozs. of reducer to 10 lbs. of ink. The picking and splitting continued but to a lesser degree. The reducer was increased by 8 ozs. for each 10 lbs. of ink and this second cut proved adequate to eliminate the picking and splitting problem.

Shalvoy said his firm used the Inkometer results with other information to minimize incidents as related above. "A record of paper, type of plates, fountain water pH, and color sequence is kept with the Inkometer data," he said. "This is referred to on subsequent runs to assure us that all materials reaching the press will closely approximate the previous run."

Equipment on Parade

Besides the research on various processes and aspects of printing, TAGA reports were heard on several pieces of newly developed equipment.

For example, S. W. Levine, R. N. Hotchkiss, and F. P. Willcox, Fairchild Graphic Equipment, Inc., explained the most efficient ways of applying the Fairchild Variable Response Unit to halftone reproduction problems. The Fairchild Variable Response Unit is an electro-optical device which enables the users of Fairchild electronic engravers to obtain any desired tone response between the original copy and the finished plastic engraving.

M. L. Sugarman, jr., Radio Corp. of America, explained the use of Electrofax in the Graphic Arts industry.

The system possesses effective photographic speeds many thousands of times those available with present techniques and usable in many Graphic Arts applications, he declared.

Whether used as a direct printing paper or in a Graphic Arts application, the basic Electrofax electrophotographic printing process consists of the same four simple steps: 1. Placing a uniform electrostatic charge on the photoconductor-resin-coated surface in the dark or under suitable safelights. 2. Exposure of the charged surface to a light pattern corresponding to the image to be produced. 3. Developing the latent electrostatic image with a suitable positively charged powdered material. 4. Fixing the developed image.

The inexpensive and thus expendable nature of the Electrofax coating, coupled with its easy adaptability to many conventional coating techniques, such as whirling, dip, spray, brush or roller coating, open many possibilities for graphic arts applications not easily possible or commercially feasible with previous photographic systems. In addition, the system combines the high speed of silver halide materials with the low cost of diazo and other common materials used in normal copying and photo-resist applications.

Further great advantages are present in that the coatings have stable storage characteristics and are not light or radiation sensitive until electrically charged, images may be deleted or added to and the final printed image is chemically resistant to normally encountered media and is stable under usual storage conditions, he said.

More Equipment Studies

David W. Lewis, American Newspaper Publishers Assoc. Research Institute, Inc., Easton, Pa., gave a summary of the work done during the past 18 months in the development of the dry offset process.

The interest of the Institute lies in the possibility of using it as an alternate method for the printing of newspaper supplements. Studies have been made at the Laboratory concerning negative requirements, printing down techniques, etching techniques, press specifications, blanket, ink, and paper requirements as well as press techniques.

In an attempt to maintain uniform conditions with respect to plate making, all conventionally etched halftone plates were given a flat etch only. If any re-etching had been done, the printed page would not have

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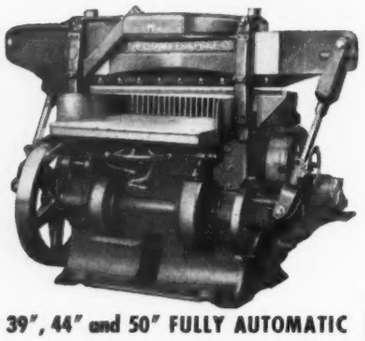

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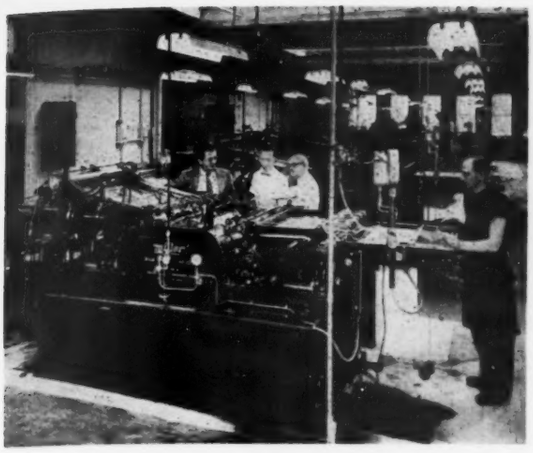


Buffalo Firm Adds Press—A new Miller Printing Machinery Co. 21 in. by 28 in. two color Tw Press recently was added to the six Millers operated by Baker, Jones, Hausauer, Inc., Buffalo, N. Y. Inspecting the newly installed press are (left to right): George I. Heffernan, executive vice president of the firm; Gordon S. Barrett, general plant superintendent; Arthur B. Wind, letterpress superintendent, and Elmer Borschel, pressman.

had any relation to the original negatives. This is one reason why the halftone break presented a problem of paramount importance.

Because a large percentage of the halftone break was occurring in the etching operation, some elementary tests were made on the DOW-ANPA etching process. In view of the excellent work which has been obtained from the DOW-ANPA high speed etched plates, all plates for dry offset are now being made by the DOW-ANPA process.

Dampening System Ideals

Looking toward improvement of the molleton dampening system used on offset press, W. H. Wood, Harris-Seybold Co., gave a talk on *A Review of Dampening Systems for Lithographic Presses*.

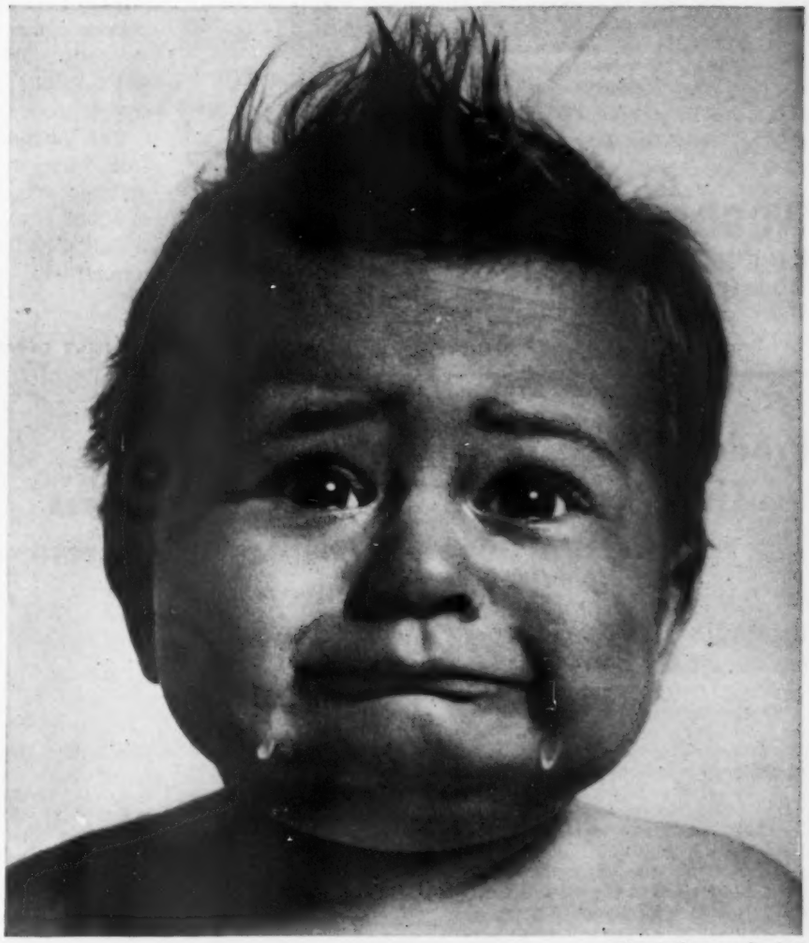
"To help other investigators in working out a satisfactory dampening system for a lithographic press," said Wood, "here are the required and the desirable characteristics which such a dampening system should have."

The required characteristics include ability to apply dampening fluid in the proper amounts and in the proper places on the plate surface; be easy to buy, install, operate and maintain; and be adaptable to present press design and press speeds. Desirable characteristics include being simple, self-contained and an improvement in required characteristics over the present molleton system.

More TAGA Business

Other topics discussed at the Boston TAGA meeting included *Reproduction of Color with Halftone Images*, by F. R. Clapper and J. A. C. Yule, Research Laboratories, Eastman Kodak Co.; *The Application of the Neugebauer Equation to Electronic Color Correction*, by V. L. Marquart, Curtis Publishing Co., and J. S. Rydz, Radio Corp. of America; *Adaption of Electronic Color Correction to the Printing Process*, by Harry E. Rose, Radio Corp. of America; *A Three-Color Black Printer*, by L. E. Martinson, Research Laboratories, Eastman Kodak Co.; *Color Differences of Halftone Vs. Flat Print*, by Willard Greenwood, Forbes Lithograph Mfg. Co.; *Atomic Energy in the Graphic Arts*, by John R. Bradford, United States Radium Corp.; *Light Sensitivity of Diazonium Compounds*, by J. F. Dowdall, Minnesota Mining & Mfg. Co.; *A New Direct Positive Photo-Offset Process for the Duplicating Field*, by C. E. Herrick, jr. and P. T. Woitach, jr., Research Department, Ozalid Division, General Aniline & Film Corp.; *The Use of Jury Panel and Ranking Methods To Determine Statistically the Significant Difference, If Any, in Printability Between Two Products*, by Donald Macaulay, Paper Quality Control, Inc.; *Investigations of Objective Methods for Evaluating Sharpness in Lithographic Press Operation*, by W. L. Rhodes, Rochester Institute of Technology; and *Silk Screen Drying Techniques*, by Victor Strauss.

It was further decided at the business meeting of TAGA that proceedings of TAGA will be pre-printed and available to registrants at the beginning of the Spring 1956 meeting. To do this, the schedule for papers must be advanced. Abstracts are to be in the hands of the Papers Chairman, Dr. Robert M. Leekley, Associate Research Director, Time, Inc., Springdale Laboratories Division, 835 Hope St., Springdale, Conn. by Dec. 1, 1955. Complete manuscripts will be required by Feb. 1, 1956.



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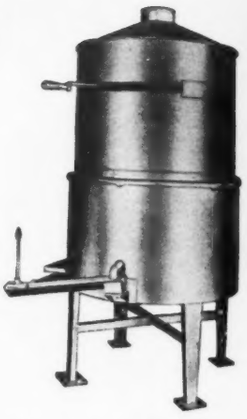

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Production Costs Can Be Reduced Thru Amplified Research, Says Eybers Before Iowa Mechanical Conference

By PAUL F. KAMLER*

**Mechanical Supt., Clinton (Ia.) Herald and Secretary-Treasurer, Iowa Conference.*

THE Iowa Newspaper Mechanical Conference was held in Sioux City, Ia., May 7, 8 and 9, at Hotel Martin. In the 28 years of its existence the Conference has been held in Sioux City only once before—that was in 1940. While this year's registration was not the largest in its history, more interest was displayed this year than has been shown for several years.

The opening session was held Saturday afternoon. Bert DuSold, *Globe-Gazette*, Mason City, president of the Conference, presided.

Linecasters Meet

Various group sessions were held Sunday morning and afternoon in the hotel. The Iowa Linecasters association had Walter F. Severin, assistant manager, midwest district, Intertype Corporation, and Beryl Troutman, Mergenthaler Linotype Co., on the program. There was also an open forum technical discussion with Paul W. Miller, Mergenthaler Linotype Co.; W. F. Christman, Mohr Lino-Saw Co.; Emil Proskovec, Ludlow Typograph Co.; Walter F. Severin, Intertype Corporation, and Frank J. Phillips, Teletypesetter Corporation, acting as panel members. Election of officers for the Linecasters resulted as follows: President, Vern L. Trumbo, Clinton *Herald*; vice president, Earl L. Ryerson, Spirit Lake *Beacon*; secretary-treasurer, Bert DuSold, Mason City *Globe-Gazette*.

Stereo-Press Session

The Stereotype-Press group met with Leonard Juneman and Arthur Evans co-chairmen. Appearing on the program were Bob Burgess, production manager and John Vlk, LaCrosse (Wis.) *Tribune*; Wallace Wood, Wood Flong Corp., and Eddie P. Gaughan, New England Fibre Blanket Co. A general discussion followed in which the men mentioned, in addition to Chas. H. Dirr, Journal-Tribune Publications, Sioux City, participated.

Gaughan Discusses Blankets

Eddie P. Gaughan, New England Newspaper Supply Co., discussed newspaper press blankets. After reviewing early attempts to produce a satisfactory blanke he stated that George Pancoast, of the old Hearst organization, conceived the idea it would be of practical value to print with a one piece packing. He took the cork and coated it as the felt had been coated and produced the one piece blanket. He discovered in operation that the one piece blanket buffed the face completely off the blanket. He then reduced the circumference of the blanket cylinder to allow thicker one piece packing in an attempt to eliminate the facing. The result was the same. The conclusion was reached that slip between blankets was needed. This principle follows the one that dictates the need of stretch in newsprint paper. This experiment is credited with the entry of the three piece blanket on the market which takes advantage of the slip principle.

Gaughan continued: "There exists an erroneous impression in the minds of some pressmen that hard packing is needed to print from on high speed machinery That is a mistake that results in sub-standard printing. High speed machinery requires firm packing, but resiliency is needed today just as much as yester-year and the needed degree of the resilient quality cannot be obtained in hard packing. Hard being solid, and firm being compact or to pack closely.

"There are many reasons why hard packing failed to function. There are high and low levels in the mold of the mat, and these are reproduced in the metal plate. Thus there are irregularities across the face of the plate. Now, when the web or sheet passes between the blanket and plate cylinders, the blankets have to yield 0.003 in. to 0.005 in. without fracturing the web and picking up the low levels in these plates.

"If blankets are hard, they will develop a blanket streak which occurs in the center of the page. Don't make the mistake of

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thinking this streak is from the tail of the plate. The tail of the plate produces a cylinder streak, not connected with this trouble.

"What about all this talk of pitch line? What is pitch line—is it an imaginary line? No, it is when the blanket and plate cylinders are running at the same speed. Remember, if you are on pitch line and try to put on more impression, the sheet will not feed, because the plate cylinder will be in control and bite the sheet out.

"On the Scott, Hoe and now on the Goss Headliner presses, the blanket cylinders are cut 0.125 in. The total press packing is 0.145 in., giving 0.020 in. impression to print from.

"On the old Goss presses, the blanket cylinders were cut 0.148 in. and could pack up to 0.176 in., giving 0.028 in. impression to go on. However, according to the condition of the press and the firmness of the blankets used, you can pack down to 0.168 in., giving 0.020 in. impression.

"Tubular presses have a blanket cylinder cut of 0.156 in. and can pack 0.175 in. to give 0.019 in. impression to go on. Or they can be packed a little less 0.172 in., according to the blanket materials and the operator in charge.

"As you set impression with a gauge from steel to steel, you arrive at pitch figures as follows. The figure of the blanket cylinder cut on your press, plus the thickness of your plate, equals the pitch figures.

"Following are some pitch figures: Scott, Hoe and Headliner presses: 0.562 in., old Goss presses 0.585 in., Tubular press 0.531 in."

Wood Discusses Stereo Mats

J. Wallace Wood, jr., of Wood Flong Corp., discussed *Mats and Shrinkage*. The speaker reviewed the introduction of so-called dry mats and the progressive shrinkage which has been provided from time to time. He also discussed the manipulating problems, newsprint savings to the publisher, flexibility and speed of stereo mats aided by improvements in mats. He also said that r.o.p. color is aided by development and use of baked mats. The commercial ad mats assist national advertising firms. He paid his respects to the possibilities of developing a nopak mat. In conclusion, he outlined some of the changes in mat molding, drying, casting and press requirements that probably will be necessary in the use of the nopak mat.

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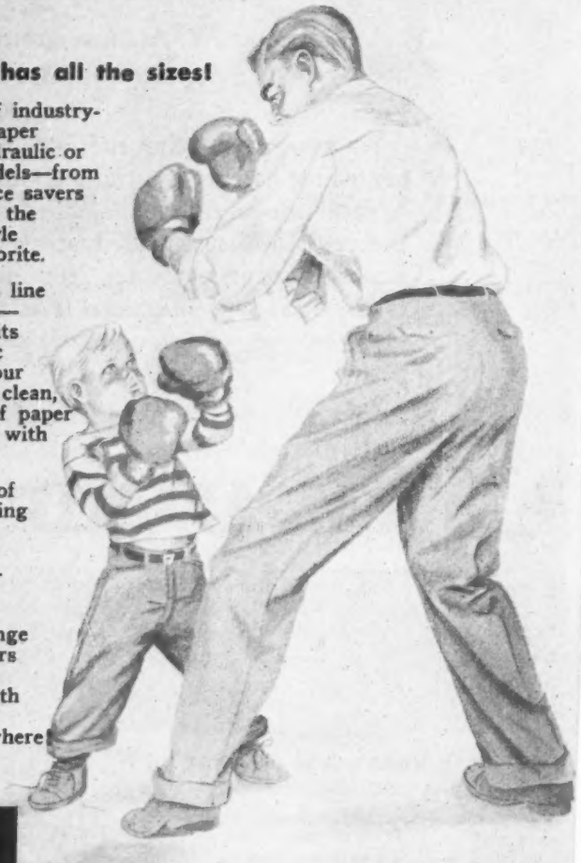

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Composing Session

The Composing room group was presided over by Co-chairmen Dave Dryden, mechanical superintendent of the Sioux City *Journal-Tribune* and William McCauley, Mason City *Globe-Gazette*. Presenting the program for this session were Harry Eybers, production manager, Washington (D. C.) *Post*; Bob Burgess, production manager, LaCrosse (Wis.) *Tribune* and Frank J. Phillips, Teletypesetter Corporation. An open forum discussion closed the session.

Weeklies Have Session

The Weekly Newspaper group session, inaugurated a few years ago and later abandoned, was revived and will be an annual feature of the Iowa Conference. Henry Africa, State University of Iowa School of Journalism, Iowa City, served as chairman for the program. The discussion centered chiefly on various mechanical problems confronting this particular group and attracted many from smaller newspapers.

Photoengravers

The Sioux City *Journal-Tribune* plant was the meeting place for the photoengravers with Glenn Holcomb and Amil Youngblade acting as co-chairmen. Chas. P. Ramsdell, jr., Eastman technical representative, was the speaker, followed by a general discussion. Panel members were Robert Cockran, engraving superintendent, Capitol City Printing Plate Co., Des Moines; William Schmitz, engraving superintendent, Omaha, (Neb.) *World Herald* and Chas. P. Ramsdell, jr.

Eybers Speaks

The annual banquet was held in Hotel Martin's ballroom Sunday evening with Amil Youngblade, Sioux City Journal-Tribune Publications, master of ceremonies. The principal address was given by Harry Eybers, production manager, Washington (D. C.) *Post*. Eybers' topic was *Newspapers of the Future*. He said in part:

"According to the latest figures I have been able to secure, there are 1765 daily newspapers in the country. Last year newspapers had a total income of $3,926,975,000. That, my friends, you will agree, is a lot of money, but because it costs so much to produce these newspapers many of the 1765 dailies are having rough going or are operating in the red.

"My opinion as to why we have high production costs that continue to rise is that we are in a rut. Do you know of any other industry where a man could have retired 30 or more years ago and could come back today and hold a job? He might be rusty for a few days but because basically we have not changed the mechanical operation of a newspaper, he would not have too much trouble.

"I have often wondered why we could

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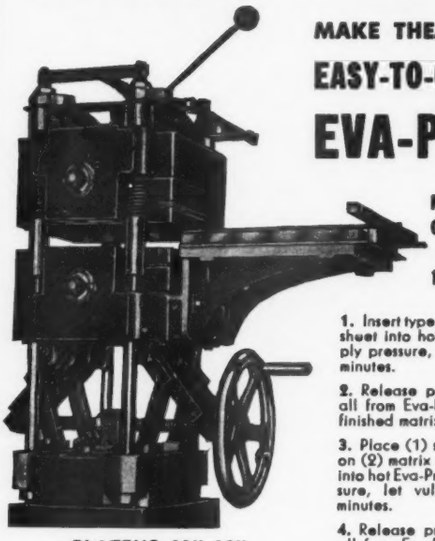

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not be progressive like other industries. For instance, the automobile industry, in spite of coming out with many changes and improvements in its cars each year, still looks even further and shows a car of tomorrow.

"Newspaper presses in principle have not been changed. The actual method of transferring the image from the plate to the paper is nearly the same as that of the first rotary presses made. Ink rollers have been changed from composition to rubber or synthetic. Improvements such as reels and automatic pasters, electronic drive equipment, better tension and other improvements have helped but, in principle, we have the same press.

"High speed presses now print papers at more than 50,000 per hr., but why do they have to weigh so many tons to transfer the image from a stereotype plate to a sheet of newsprint?

"It does seem ridiculous that a press has to weigh so much just for the function of transferring the image from a stereotype plate to the newsprint. I suppose one of the reasons is our present stereotype plate weighs around 43 lbs. By the time eight of them are locked on the cylinder there is a total weight of 344 lbs. With high speed presses maybe you do have to have the weight and size in a press, but why do stereotype plates have to weigh 43 lbs.?

"Why, after all these years, do we still have to use carbon-black and oil to make our news inks? It still rubs off the newsprint.

"Newsprint has become one of the main factors in the high cost of producing a newspaper. Today the price of newsprint is $126 a ton. In my opinion, the improvement in the product certainly does not justify the increase even though I will admit we do get a little better color and calender. I also believe newsprint comes to us in better condition. The tremendous increase in the cost of newsprint is one of the big factors as to why newspapers are having rough going or are operating in the red.

"Next to newsprint the composing room on many newspapers is highest in cost and it is definitely a labor cost. There have been some improvements made in the principal machinery used in the composing room but basically the machines are the same.

"Walter Morey invented the Teletypesetter over 25 years ago, yet, it has only been in the last few years that newspapers have been taking advantage of it. Even with the Teletypesetter operation, why does it have to be tied in with a linecomposing machine? Why could we not have an entirely new machine tied in with the Teletypesetter? There is one possibility now showing up in the field that might tend to revolutionize the game and that is the substitution of film for hot metal by the use of the Fotosetter. The Intertype people have been out with this machine for a number of years and yet I believe I can count the newspapers using this machine on one hand.

"Since Intertype came out with this machine there are several other machines

Officers of the Iowa Newspaper Mechanical Conference—Elected at the Iowa Newspaper Mechanical Conference held in Sioux City, Ia., May 7, 8 and 9, are left to right: Howard W. Lee, Ottumwa *Courier*, president; Chas. W. Robinson, Des Moines *Register and Tribune*, second vice president; Wm. G. Dorriss, Des Moines *Register and Tribune*, first vice president; Paul F. Kamler, Clinton *Herald*, secretary-treasurer (re-elected).

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such as the Photon, Mergenthaler Linotype's Linofilm and the Lanston Monotype Monophoto machine.

"In engraving there have been few changes and few radical improvements. Roll film did speed up things; cameras and lights have been improved, also some of the other equipment. The last thing on the market to cause a stir is the Dow fast-etch machine, and it looks very promising.

"In the stereotype room the last revolutionary change was in the twenties with the introduction of the so-called dry mat. We are shrinking $1\frac{3}{16}$ in. in our plant and, believe me, we are not using a dry mat to get it. This dry mat did eliminate the old hot steam tables and cut down on the molding time.

"The mailing room is closer to revolutionary progress than any other department. It was only the day that we realized it was without reason to buy high-speed presses, pour a lot of papers into a mailing room and have them stop there, that we started to do something about it. Since then several new tying machines have showed on the market. The Jampol Company has done an excellent job with conveying equipment.

"We finally have an inserting machine that is being pretty widely used in the larger newspaper field. The Cutler-Hammer people are now working on an automatic stacker in Milwaukee and it should be a big lift to the mailing department.

"I believe the total circulation of all newspapers in this country is now over 55 million and still increasing. But there will be less than the 1765 newspapers we have left today if we don't curb these rising costs. What are we going to do about the future? In my humble opinion, the answer is: More and more research by manufacturers, publishers and unions.

"I mention the unions because I feel, and I am sure they realize they should, play an important part in this. It is certain they have nothing to fear for their membership, because history has proved that progress seldom has hurt labor. I know that most of the manufacturers to date carry on constant research programs.

"About seven or eight years ago the ANPA laboratory was set up at Easton, Pa. There work is being done on many projects. Examples are the fast-etch machine, the non-pack stereo mat and dry offset.

"Tremendous research is carried on by other industries such as tire companies, the automobile industry, appliance manufacturers, the airplane people, etc. Granted these companies are big and wealthy. It would be impossible for any single newspaper to carry on a comparable research program.

"We all know the publishers are deeply concerned and rightly should be about the

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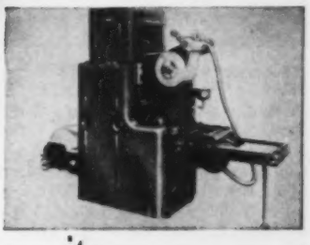

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high production cost that is continuing to rise year after year. Now let us take a look at what they are doing about it. With the newspapers grossing nearly $4 billion, research has had to get along with a budget of around $200 thousand per year. On the other hand, the Bureau of Advertising of the American Newspaper Publishers Assoc. is operating on a budget of $1,750,000—eight and one-half times more than the money devoted to research. In my opinion, this is really putting the cart before the horse to spend eight and one-half times more on a sales program than on a research program. This research program was set up to find new ways and means in mechanically producing a newspaper with the principal thought in mind to curb these rising costs—costs that are actually endangering the future of many of our newspapers.

"I don't mean to imply that the sales budget is out of line, but, why set up a tremendous sales machine to sell business and have the high production costs eat up the results? Not one cent of this sales budget is being devoted to improve the handling of material for newspapers or better the reproduction qualities. Research must come up with new methods and solutions to old problems which would not only reduce costs but make our newspapers even more acceptable to both advertisers and our readers.

"The chemical industry last year with a gross income of $20 billion spent $300 million on research. Allied Chemical alone with a gross of $530 million last year spent $15 million for research. Yet, the newspapers with a gross of $4 billion only spent $200 thousand. This, of course, does not include the individual efforts by a few of the larger newspapers.

"In defense of the manufacturers of equipment, I might add it is pretty discouraging to find many newspapers, especially among the larger metropolitan newspapers, that are not taking advantage of the equipment that is on the market."

Gessler Wins Ault Award—At the 41st annual convention of the National Assoc. Printing Ink Makers the Ault Award was presented to Dr. Albert E. Gessler for distinguished contribution to the advancement of the printing ink industry. Dr. Gessler, emeritus research director, Interchemical Corporation, was given the award for his development of heat set inks, first employed in letterpress printing and more recently adapted to long run offset operations. Dr. Gessler first hit upon a composition in the early 1930's, which, when tried on a printing press, came close to meeting the requirements for an odorless and quick drying ink. The award to Dr. Gessler was presented by Dr. John C. Warner, president of Carnegie Institute of Technology and president elect of the American Chemical Society. The annual winner of the award is selected from nominations from the various Graphic Arts fields by a committee. This year's committee was headed by Frank Morrison, Morrison Printing Ink Co., who was re-elected president of the National Assoc. of Printing Ink Makers at the same meeting. Pictured above (from left to right) are: Morrison; Dr. Warner; Dr. Gessler; and G. Stuart Braznell, president, National Printing Ink Research Institute.

Dexter Detroit Office—The Dexter Folder Co. recently announced the opening of an additional office to be located at 1415 Dime Building, Detroit, Mich. These facilities will service the Michigan territory.

IMPROVED "Capco" Portable Ink Fountain

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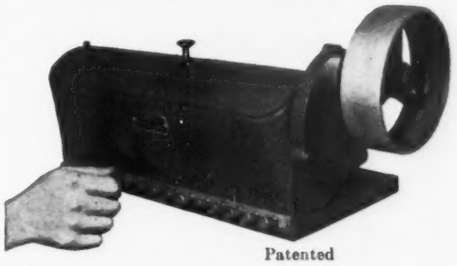

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NEW PRODUCTS DIVISION

The BEVERIDGE PAPER CO.

Indianapolis 4, Indiana

News Items

(Continued from Page 12)

dent of the Printing Supplymen's Guild of New York. Bellone, a graduate of Florida Southern College, is also a member of the Guild.

Two Executives Elected—Election of two veteran executives of George F. Motter's Sons was announced by George F. Motter, president of the firm, following the company's recent annual meeting. Both men have served as directors of the company for the past several years. Melvin L. Beck, who has been directing sales of the company, was elected vice president of sales. Previously he was secretary and assistant treasurer of the firm. Paul Spiese was elected

BECK SPIESE

vice president of finance. He joined the company in 1945 as an accountant and in 1946 was elected comptroller.

New Address—Change of address of its Eastern sales office has been announced by E. G. Staude Mfg. Co., Inc. The new location is at 35 Beechwood Ave., Mt. Vernon, N. Y., and is headed by Theodore Von Thein, eastern sales manager. Telephone number of the office is Mt. Vernon 4-3753.

Intertype Vacation Period—Intertype Corporation will observe a plant and office wide vacation period, July 30 to Aug. 14, inclusive. While no regular shipments will be made during the period, arrangements have been effected to take care of any emergencies that may arise in the trade.

Park and Grumbaus Promotions—It was announced recently that seven executive appointments had been made at the Chicago *Tribune*. Announcement was made by Publisher Chesser M. Campbell. Of chief interest to production and mechanical executives was the appointment of John W.

For Sale

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sale

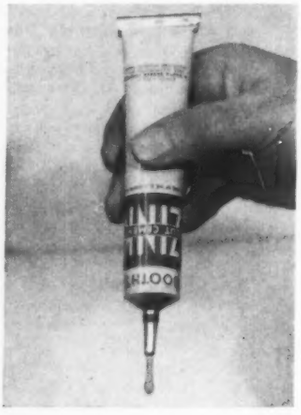
The Board of Directors of the Daily News Publishing Co., publishers of the Beloit (Wisconsin) Daily News, to meet expanding need for additional publishing facilities, have authorized the sale of their Commercial Printing Department and appointed Type & Press of Illinois Inc. as their sole selling agents.

YOUR CHOICE of the best that money will buy in modern bindery, press-room and composing room equipment.

Comprehensive circular on request

Miehle Model 29 letterpress, Miehle 41 Two Color unit, Miehle 0 Two Color 56" #17768, 2 Miehle 2/0 single color units, Miehle 53" press #14238, New Lawson 3 knife Rapid Trimmer, Christensen 8 station Stitcher, New Sheridan 6 pocket automatic feeders for Christensen, Dexter 189-A automatic folder, Baum automatics 25x38 and 17½x22½ new 1954, Seybold 50" Precision model cutter, Linotype Model 29, quadder etc., Steel composing room equipment.

Type & Press of Illinois, Inc.
3312 N. Ravenswood Avenue
Chicago 13, Illinois



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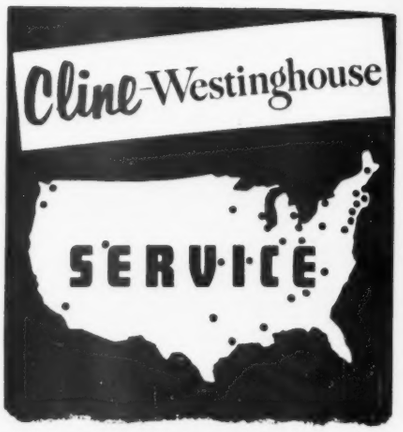

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Los Angeles 17, California • New York 17 N. Y.

Park, production manager, to the post of manager of mechanical research. Harold F. Grumhaus, formerly assistant production manager, has been named to succeed Park as production manager. Another item of interest was the recent election of Park as director and vice president of the Chicago Tribune Building Corp.

New Position Appointment—T. M. Broadston, former manager of Harris-Seybold Co.'s New York district, has been promoted to the newly created position of eastern sales manager for the company, as announced by Ren R. Perry, vice president of sales. Broadston will have responsibility for Harris-Seybold's sales and service in the Philadelphia, New York and North East districts. Broadston joined Harris-Seybold in 1948.

BROADSTON

Appointment of Worthington—Emory W. Worthington was appointed vice president of engineering as announced recently by George F. Motter, president of George F. Motter's Sons. Worthington has been associated with R. Hoe & Co., Inc. as chief engineer; vice president and chief engineer of Babcock Printing Press Corp.; vice president of Bjorksten Research Laboratories; chief engineer of Champlain Corporation and was associated with the Goss Printing Press Co. for many years in various engineering positions.

WORTHINGTON

Interchemical Engineering Department—Allen Leroy Emtage has been appointed head of Interchemical Corporation's central engineering department in New York. He succeeds Richard G.

Seybold Cutters in Production—Part of the assembly and testing floor in Harris - Seybold's Dayton, Ohio, plant shows the Saber cutters before shipment. Nine models of the new Saber in three sizes were recently announced by Harris-Seybold. On assembly floors like this, components are brought together, and completed machines are tested on various cutting operations before shipment.

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Automatic Metal Pump

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You need this pump that's engineered to deliver metal at adjustable speeds and widest range of quantity possible from 5 to 500 lbs. and beyond.

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Printing equipment and supplies for the Graphic Arts Industry

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For Casting Strip Material

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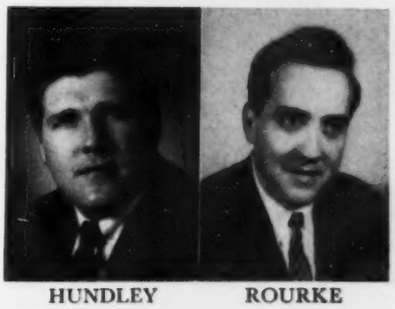
Knowland who will continue with the department on a part time consulting basis. Emtage graduated from Stevens Institute as a mechanical engineer in 1933. He joined Interchemical in 1937 and was associated with the early development work in connection with Aridye pigment colors for the dyeing and printing of textiles. He was most recently plant engineer for the Textile Colors Division.

BECKER

Neal Dow Becker, chairman of the board, Intertype Corporation, died May 16 at his home at 340 Park Ave., New York 22, N. Y. Becker became president of Intertype Corporation in 1926 after having served as president of the Hammond Typewriter Corp. from 1913 to 1924. He became chairman of the board of Intertype Corporation in 1952. Becker is survived by his wife, Charlotte Dawn Allen and two children, Mrs. George DeWolf Wever of New York, N. Y., and Mrs. Alexander Sanford Kellogg, Bar Harbor, Me.

Miller Eastern and Western Sales—Two appointments of sales representatives were recently made by Miller Printing Machinery Co. F. G. Betlock, western division manager announced the appointment of R. V. Hundley as Miller representative in the St. Louis-Nashville area. Hundley is a



HUNDLEY ROURKE

native of Louisville, Ky., and attended the University of Kentucky. A. E. Searle, vice president and eastern division manager announced the appointment of W. M. Rourke as Miller representative in the New York area. Rourke has had several years experience and has attended both Fordham University and the University of North Carolina.

New Executive—John E. Sunderland has been appointed vice president in charge of manufacturing, engineering and personnel for Sam'l Bingham's Son Mfg. Co., as announced by W. J. Hunt, president of the company. Sunderland had been associated with Standard Products Co., Tyre Rubber Co. and Goodyear. He will presently be located at Bingham's main factory in Chicago.

SUNDERLAND

New Bostitch Plant—Bostitch, Incorporated, manufacturers of staples and stapling machines, will move its main manufacturing plant and general offices to East Greenwich, R. I., where a new and larger factory will be built. Pres. Emmet G. Gardner stated the move is necessary because of heavy production demands resulting from sales which have increased 450%

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Get the RIGHT Control to meet your needs! Very small space requirements. There's an exact type to give you the most for your money.

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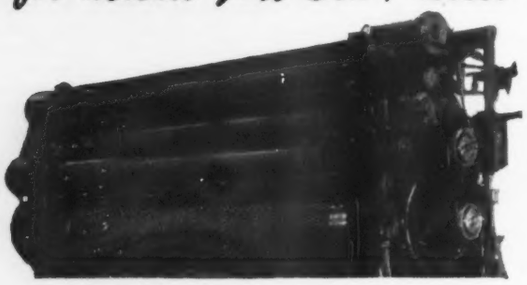
5541 WEST MONROE STREET • CHICAGO 44, ILL.

for low cost addition of third and fourth colors

for Miehle Flat Bed Presses



Western Printing Machinery's Extra Color Letterpress Unit for Miehle flat bed presses is the answer for low cost addition of third and fourth colors.

Precision built in several sizes, it will make a three or four color press of any standard 2-color Miehle flat bed. Production specifications are the same as the press to which it's permanently attached. Synchronization is perfect. Only minor changes are required for its installation.

This unit is low in cost and requires no additional floor space as it is mounted on top of the Miehle units. Operates efficiently and economically with the Miehle.

Write for further details.

WESTERN PRINTING MACHINERY CO.
3519 N. Spaulding Avenue
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wpm

FIGURES SHOW

how production winds are blowing

Production manager checks over monthly figures of front office statistician—"fewer mats used," he remarks, "but more pages cast. Metal replacements a few pounds less. Starters in the press room with less than a minute's variation from day to day. Production cost per page lower than a year ago.

"I guess," he remarks to Foreman Fred, "that change to Certifieds, that you hollered for, was a pretty good move."

For dependable stereotyping, rely on Certified Mats

Certified DRY MATS

CERTIFIED DRY MAT CORPORATION, 555 Fifth Avenue, Dept. M, New York 17, N. Y.

since 1945. The one story building will be erected on a 90 A. land tract. Construction of the factory will be started this summer, and the move will be completed by the autumn of 1956, it was stated.

McMullen Now Vice President—On Tuesday, June 7, stockholders of The Journal Co., Milwaukee, authorized the election of six new vice presidents and created the office of executive vice president. Publisher Irwin Maier was elected executive vice president by the board of directors. Among the vice presidential elections was that of Joseph E. McMullen. McMullen worked briefly for the *Journal* in 1921 as a pressman, then returned to the paper in 1939 as color press foreman. In 1947 he was named assistant production manager and in May, 1952, became production manager. As such he is in charge of all mechanical steps—printing, engraving, stereotyping, paper handling, presswork and mailing—in the production of the paper. The art and photography and dispatch departments are also under him.

Executives Appointed at Bingham's—Kenneth E. Butler has been appointed vice president and director of sales at Sam'l Bingham's Son Mfg. Co., as announced by W. J. Hunt, president of the company. Butler was formerly general sales manager and treasurer of Bingham Brothers Co. and had been with them 20 yrs. Prior to that he was a salesman with the Whitaker Paper Co., Baltimore, Md. Charles W. Greene has joined the research staff of Bingham as a process and development engineer on rubber. Greene previously had been in the research and development department of Standard Products Co. and was affiliated with the Johnson Rubber Co. and the Norbalt Rubber Co. Greene holds a Bachelor of Science degree in chemical engineering from the Univ. of Michigan. Both Butler and Greene have their offices in the main plant in Chicago.

BUTLER GREENE

Flint Opens Eastern Factory—The opening of a Howard Flint Ink Co. plant in Paterson, N. J., marks the entrance of Flint inks into the Eastern market. The new plant has 18,000 sq. ft. of floor space with land area for tripling its present size. Located at 785 E. 27th St., the Paterson plant is served by a siding from the Susquehanna Railroad. New mixing and milling equipment was installed and modern laboratory testing devices are provided for both product control as well as development. The Flint technical staff in Paterson is headed by Frederick Dankert and the overall operation will be supervised by John F. Devine, vice president of Flint. For customer convenience, the Flint Company will continue its office in the Chrysler Building.

New Member for NPEA—The firm of Rathbun & Bird Co., New York, N. Y., Carl J. Bergstrom, president, has been elected a member of the National Printing Equipment Assoc., Inc., by vote of the directors. The firm has been in business for many years and has maintained a high reputation.

Officer Alignment Changed—Several changes were made at the recent annual meeting of Whiting-Plover Paper Co. To

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We will forward all mail addressed to Box Numbers. When answering Box Numbered ads, address as follows: Box Number . . . PRINTING EQUIPMENT Engineer, 1276 West 3rd Street, Cleveland 13, Ohio.

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FOR SALE

Model 8 Linotype, serial 29325. Three magazines, fast distributor screws with rigid entrances, three almost-new molds, gas pot with new-style Merg controls, Emerson motor, low base, universal knife block, downstroke knife wiper, outside galley, low base. Machine was overhauled by Merg service man four years ago; can be seen in operation our plant. Price $1,500 fob our floor. Mathews Printing Co., 600 Capitol St., Charleston, W. Va.

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A key position in the Engineering Department of a nationally known manufacturer of packaging for the food industries. Should have 15 or more years of experience in creative design and modification of automatic machinery. Desirable age range 35-45. An excellent opportunity in an expanding company located in the heart of Wisconsin's Fox River Valley. Submit complete resume and photo to:

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Famous since 1936, hundreds of users testify to the effectiveness of STAR CUT CEMENT. Do a better job of mounting photoengravings, stereotypes and electrotypes by using STAR CUT CEMENT. Composing, stereotype, electrotype and photoengraving executives must see that the mounting job is done right. They know the value of a cement that permits mounting cuts quickly and holds them in place. Be sure to use the PROVED cement–STAR CUT CEMENT.

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17 years' experience in designing, supervisory, trouble shooting, redesigning on automatic machinery, photo-mechanical equipment and printing presses. Age 44, B.S. degree equivalent. Reply Box 531, PRINTING EQUIPMENT *Engineer*.

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SPEEDAUMAT MAILING MACHINES

For addressing standard and tabloid newspapers. Will consider similar equipment of other makes. Reply Box No. 533, Printing Equipment Engineer.

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Harris LTG, 17 x 22", as is.
Harris LTC, 21 x 28", as is.
Harris LTN, 23 x 36", as is.
Harris LST, 35 x 45" two-color, as is.
Harris LSG, 46½ x 68½" two-color, as is.

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ASSISTANT PRODUCTION MANAGER FOR METROPOLITAN NEWSPAPER

Preferably a mechanical engineer as an assistant to mechanical superintendent, metropolitan newspaper midwest. Previous newspaper experience desirable but not required. Would assist in all phases of production management of a daily newspaper, and also such work as planning and layout of the mechanical departments. Age 21 to 30 years. Write fully giving complete biography to Box 532.

If your printing plant executive status has changed, please notify *Printing Equipment Engineer* promptly. By so doing, you can be sure to receive this magazine promptly at your business address.

Mechanism of the Linotype and Intertype

Written for Machinist-Operators, Machinists, Superintendents and Students

Technical operating knowledge of the Linotype and Intertype is available in the 14th edition of this 334 page book. Revised and amplified by Oscar R. Abel and Windsor A. Straw, the text includes 200 illustrations. Information has been added about late improvements in the machines. A practical and essential book for every composing room.

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PRINTING EQUIPMENT *Engineer*
1276 W. 3rd St., Cleveland 13, O

fill the vacancy created by the death of his father, Frank B. Whiting in 1952, George Al Whiting was elected chairman of the board. Thomas Leech, former vice president and general manager, succeeded Whiting as president and treasurer. John Hoerres, secretary, was also elected as vice president. Thomas A. Moore is assistant secretary and treasurer. Directors, all re-elected, are Whiting, Leech and Moore.

DeNORMANDIE

Miehle Appoints Representative — Thomas F. DeNormandie was recently appointed Minneapolis representative of the Miehle Printing Press & Mfg. Co., it was announced by Carlton Mellick, vice president in charge of sales. DeNormandie will visit letterpress, offset and carton plants in Minnesota, Western Wisconsin, Iowa, North Dakota, South Dakota and Eastern Montana.

Larger Quarters for Williamson— Williamson & Co., Inc. has moved its west coast operation into larger quarters at 1031 Bayshore Highway, North, San Mateo, Calif., it was announced by Eugene Williamson, president of the firm. The new facilities will take advantage of the area's trucking service to all parts of the West. Additional personnel for the San Mateo plant have been trained to handle orders and technical problems.

Controlling Atmosphere

(Continued from Page 20)

lion decks of advertising playing cards are printed per year. One of the five steam humidifiers used to keep the heavy laminated stock in good condition will be seen at the top of the photo. The management of this concern states production schedules and the high quality of press-work turned out here could not be maintained without such control of the moisture content of the paper.

Fig. 5. — Walton Centrifugal Humidifier for installation in any warm air furnace duct system.

The Bahnson humidifying unit now being used in printing plants and also in paper mills is its Type BA-2, shown in Fig. 2. Actually, Fig. 2 is a view in the finishing room of one of the best known paper mills producing high quality paper for printing. Of course, the question may be legitimately asked what humidification in a paper mill has to do with the Graphic Arts industry, but there is a very convincing answer.

From Mill to Plant

As more and more printing plants become humidified, or completely air conditioned, they find it essential that the paper be received with the proper moisture content and they are now demanding that the paper be so shipped. Since it is possible to prevent serious changes in moisture content by packing the paper tightly with moisture proof wrappers, paper which leaves the mill in proper condition as to moisture can be expected to reach the conditioning, or the press-room, of the printer in good condition. Even if the printing plant is not humidified, it is extremely helpful to the printer to be able to order paper with the moisture content he requires, and he is nowadays more and more ordering it that way from the mill, many times in rather small quantities at a time so that it will not be exposed to unfavorable atmospheric conditions very long before it is used.

Consequently, the paper mills are going in more and more for humidity control in their finishing rooms. The Bahnson Type BA-2 humidifiers shown in Fig. 2 use the centrifugal principle of water atomization, with motor-driven evaporators inside the unit. The air passing over these evaporators and through the spray chamber becomes saturated, then passes through 4 in. thick filter-eliminators which remove all dirt and droplets of water. The air delivered to the room is then saturated, or, in other words, humidified to the greatest possible extent without having free moisture.

Since there is no free moisture there can be no deposit of moisture in the room, and it is possible to use grilles to provide proper regulation of air currents for distribution of humidified air in the room. This provides uniform distribution throughout the space. In the particular room seen in Fig. 2 the paper has been cut and is being inspected and sorted prior to wrapping for shipment to the printer. These units are used by printers in their storage rooms, pressrooms, binderies and other departments.

The Bahnson Company's Humiducts as shown in Fig. 3 are also being used just for humidification, but they include features whereby it is a simple matter to convert them for air conditioning. They fit in very well where complete air conditioning is planned at a later date. In its simplest form the Humiduct consists of a duct placed near the ceiling with openings at frequent intervals, a fan and a centrifugal evaporator. The latter gives a fine spray of water which is evaporated partly in the duct and partly after the air has been discharged into the room. More than one such unit is often installed to give even distribution of moist air. Room air may be recirculated through a screened intake, and fresh air for ventilation may be introduced through an opening in the wall or window. Automatic control is provided for the intake of moisture and for the operation of recirculating and fresh air dampers. How these units are equipped for complete air conditioning will be explained later.

In Fig. 4 are shown Walton centrifugal humidifiers in a pressroom.

In Fig. 5 is shown a humidifier designed for installation in warm air ducts.

(To Be Concluded)

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JULY 1955

P. E. E. REPRESENTATIVES

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WILLIAM L. OSBORN, Eastern Advertising Representative, 2709 Grand Central Terminal, New York 17, N. Y. Phone MUrray 6-5980.

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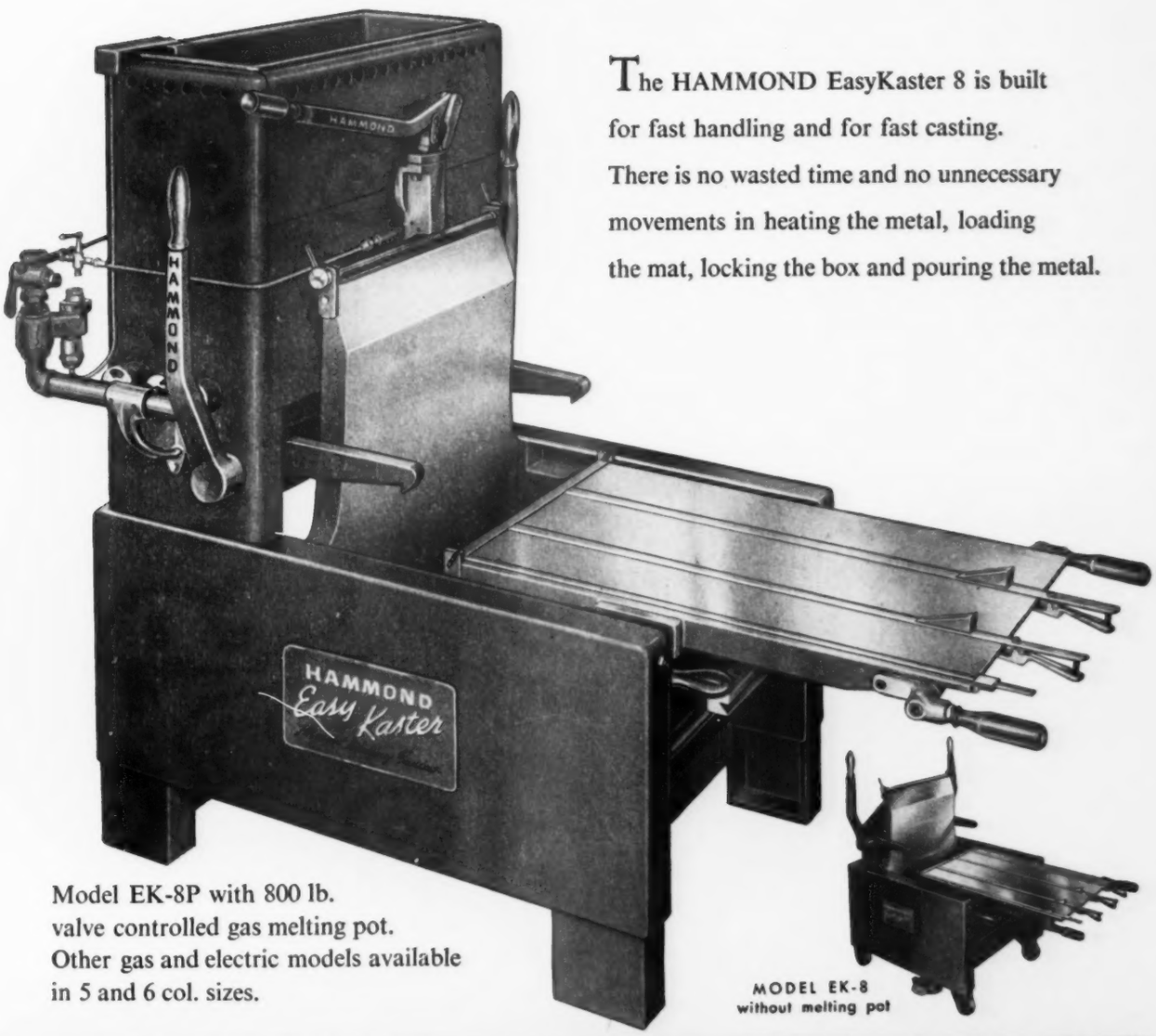
GAS OR ELECTRIC 800 LB. CAPACITY VALVE CONTROL METALPOT • AUTOMATIC METAL TEMPERATURE CONTROL • BALANCED 4-POINT LOCK-UP • SMOOTH ROLLING BED

Hammond EasyKaster 8



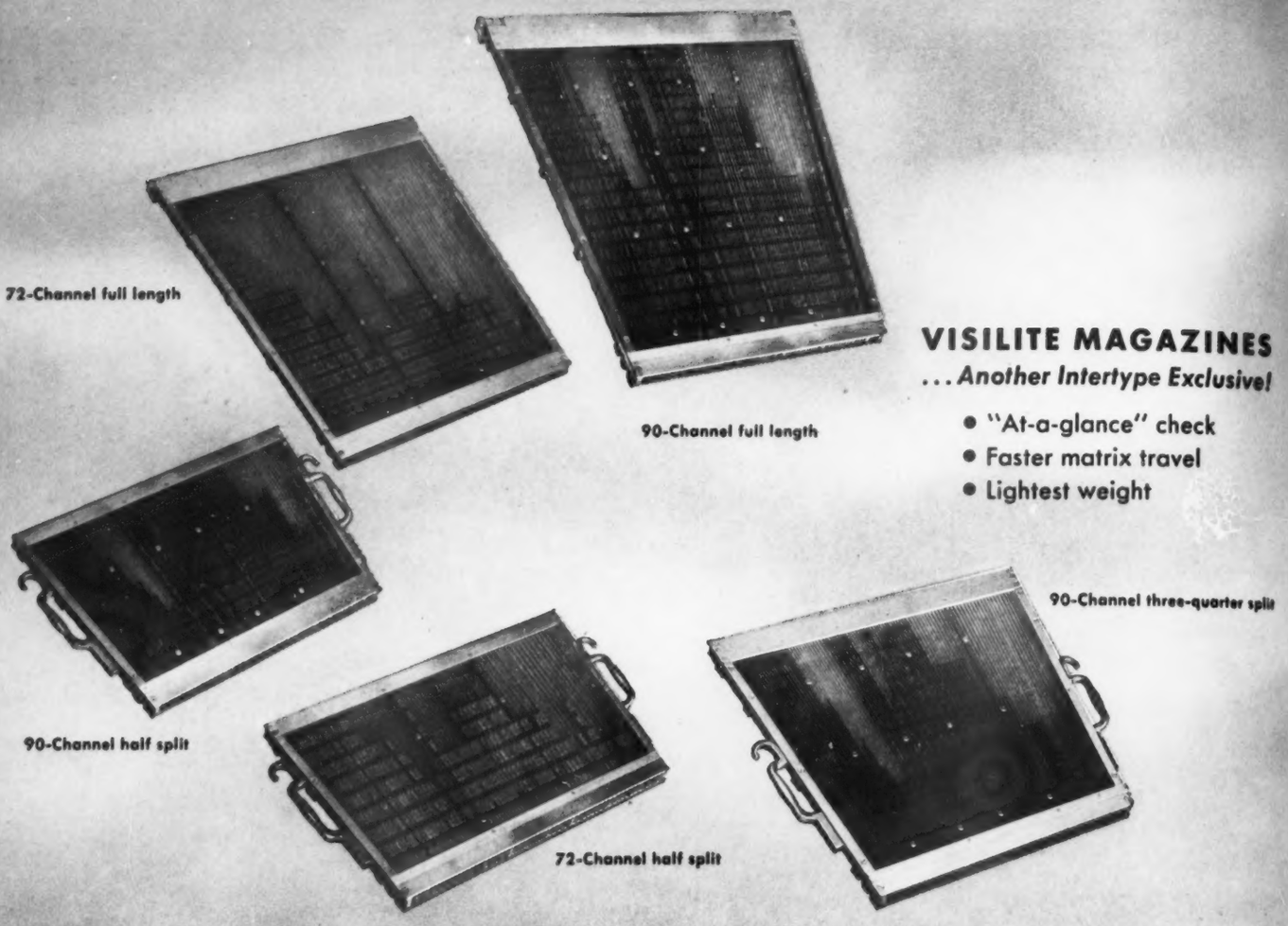
The HAMMOND EasyKaster 8 is built for fast handling and for fast casting. There is no wasted time and no unnecessary movements in heating the metal, loading the mat, locking the box and pouring the metal.

Model EK-8P with 800 lb. valve controlled gas melting pot. Other gas and electric models available in 5 and 6 col. sizes.

MODEL EK-8
without melting pot

Hammond Machinery Builders INC.

1604 DOUGLAS AVENUE • KALAMAZOO, MICHIGAN



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